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ABSTRACT

This guide is intended to help schools and classroom teachers in Alberta provide successful school experiences for gifted and talented students. Section 1 focuses on program administration, including Alberta legislation, policy, and regulations; district administration of programs; and school administration of programs. Section 2 identifies an emerging paradigm which views giftedness as having multiple forms and as being diagnostic, developmental and based more on performance than test results. Also considered are concepts of giftedness as defined by Sidney Marland, Joseph Renzulli, Howard Gardner, Robert Sternberg, Donald Treffinger, Francoys Gagne, Julian Stanley, John Feldhusen, and George Betts. Section 3 focuses on identification with emphasis on inclusive identification processes. Section 4 considers characteristics of creatively gifted students in the visual and performing arts and offers classroom strategies for developing these talents. Section 5 specifically discusses strategies for designing and implementing instruction, including curriculum modification and instructional strategies. Section 6 discusses post-modern theory, its impact on current educational practice, and implications for developing curricula for gifted and talented students. Forty-eight sample forms are appended. Also attached are suggested teaching resources, publishers' addresses, an annotated test inventory, and a listing of support networks. (Contains approximately 400 references.) (DB)

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Administrators	✓
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INTRODUCTION TO THE SERIES

Programming for Students with Special Needs is a series developed in response to a needs assessment survey conducted by the Special Education Branch of Alberta Learning in the spring of 1992.

The information provided by survey respondents has been used to guide the nature and content of the series. The respondents indicated the need for practical suggestions about instructional strategies, classroom management, preparing individualized program plans and understanding the nature of special needs. They also requested information about special education resources.

The following books are included in the series. The information in each book is interrelated and can be used to provide instruction to all students.

BOOK 1

TEACHING FOR STUDENT DIFFERENCES

Highlights strategies for differentiating instruction within the regular classroom for students who may be experiencing learning or behavioural difficulties, or who may be gifted and talented. It includes ideas for varying instructional time, the learning environment, resources, materials, presentation, assignments and assessments to accommodate students with diverse needs. This book contains instructional strategies arranged by core subjects as well as by categories of differences: e.g., learning disabilities, behaviour disorders, and gifted and talented. A variety of useful forms to assist teacher planning is found in the appendices.

BOOK 2

ESSENTIAL AND SUPPORTIVE SKILLS FOR STUDENTS WITH DEVELOPMENTAL DISABILITIES

Includes:

- developmental checklists for communication skills: e.g., receptive, expressive, social, articulation and vocabulary
- checklists for gross and fine motor development, including colouring, graphics, manuscript printing and cutting
- charts and checklists which provide a continuum of life skills by domain (domestic and family life, personal and social development, leisure/recreation/arts, citizenship and community involvement, career development)
- checklists for mathematics, reading and writing to Grade 6
- an annotated list of teaching resources.

BOOK 3 INDIVIDUALIZED PROGRAM PLANS (IPPS)

Contains a process for IPP development and strategies for involving parents. This book provides information on writing long-term goals and short-term objectives along with case studies and samples of completed IPPs. It addresses transition planning and features forms and checklists to assist in planning.

BOOK 4 TEACHING STUDENTS WHO ARE DEAF OR HARD OF HEARING

Includes information on the nature of hearing loss and the various communication systems which may be used. The book contains information on amplification, educational technologies, program planning and teaching strategies.

BOOK 5 TEACHING STUDENTS WITH VISUAL IMPAIRMENTS

This resource offers basic information to help provide successful school experiences for students who are blind or visually impaired. The information in this book addresses:

- the nature of visual impairment
- educational implications
- specific needs
- instructional strategies
- the importance of orientation and mobility instruction
- the use of technology.

BOOK 6 TEACHING STUDENTS WITH LEARNING DISABILITIES (LD)

This resource provides practical strategies for regular classroom and special education teachers. Section I discusses the conceptual model and applications of the domain model. Section II includes identification and program planning, addressing early identification, assessment, learning styles and long-range planning. Section III contains practical strategies within specific domains, including metacognitive, information processing, communication, academic and social/adaptive. Section IV addresses other learning difficulties including attention-deficit/hyperactivity disorder and fetal alcohol syndrome/possible prenatal alcohol-related effects. The appendices contain lists of annotated resources, test inventories, support network contacts and blackline masters.

Programming for Students with Special Needs is not intended to be a complete authority on the many disciplines associated with the education of students with special needs. In providing instruction to students with special needs, staff should utilize the support services available in their jurisdictions.

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    - Alberta Associations for Bright Children
    - Alberta Home and School Councils' Association
    - Alberta School Boards Association
    - Alberta Society for the Visually Impaired
    - Alberta Teachers' Association
    - Autism Society of Alberta
    - College of Alberta School Superintendents
    - Council for Exceptional Children (CEC), Alberta Federation
    - Learning Disabilities Association of Alberta
    - Premier's Council on the Status of Persons with Disabilities
    - University of Alberta, Department of Educational Psychology.

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INTRODUCTION

All students have strengths — intellectual (thinking) and affective (feeling) — and should be provided opportunities to demonstrate their highest level of achievement in all curricular areas. However, some students by virtue of outstanding abilities, are capable of exceptional performance. Students who are gifted and talented have characteristics and needs that are both similar to and different from other learners. There is a diversity of characteristics, talents and needs, both within and among these students. Given this diversity, students who are gifted and talented have special educational needs. It is important that these needs be addressed both at home and at school.

Contemporary theorists view giftedness as the multi-faceted, multi-dimensional potential for creative productivity, considering a person's accomplishments or attainments over a sustained period of time. Evidence indicates that students who display the potential for the development of gifted behaviours require differentiated educational programs and services beyond those provided by regular programming in order to realize their contribution to self and society.

Effective educational practices for students who are gifted and talented include a supportive learning environment, effective programming options and services, appropriate curricula which meet diverse needs, and effective teaching and learning strategies.[1]

A contemporary approach to gifted education includes the following goals.[2]

- Promote deliberate and systematic efforts in schools to seek, recognize, respond to and enhance the development of the strengths, talents and sustained interests of students and staff.
- Support schools' efforts to establish and maintain a culture that values, promotes and rewards excellence.
- Guide school personnel in their efforts to create, support and enhance a climate conducive to innovation, and the recognition and development of talents among students and staff.
- Stimulate and support ongoing efforts by schools to recognize individuality and promote higher levels of thinking, learning and productivity among students and staff, and encourage independent, responsible self-direction.
- Foster ongoing professional development to enable educators to expand their abilities to recognize and nurture students' strengths and talents.

- Support and enhance effective use of community resources to expand learning opportunities and enrichment for all students.
- Encourage all staff members to be aware of the academic, personal, social and emotional characteristics and needs associated with giftedness, and respond positively and effectively to such needs in their students.
- Encourage ongoing dialogue and actions in schools that will lead to ambitious visions of their goals and mission, and promote their attainment.

This resource offers information to help provide successful school experiences for students who are gifted and talented. It will help teachers identify learners' unique combination of strengths, interests and needs. Teachers may want to use this information as a foundation for shaping everyday lesson planning.

SECTION 1: ADMINISTRATION OF PROGRAMS FOR STUDENTS WHO ARE GIFTED AND TALENTED

This section provides district and school administrators with direction in providing required and appropriate education programs for students who are gifted and talented.

The Alberta Government, through the *School Act* and education policies and regulations, requires Alberta school districts to take responsibility for the education of students with special needs. The *Guide to Education for Students with Special Needs* (Alberta Education, 1997) states that one category of special needs is gifted and talented. Specific references regarding the responsibility for providing appropriate educational programming are cited below.

Education for the gifted and talented requires an understanding that their differences are both real and legitimate . . . Like all other students, their educational experiences must be appropriate for them.

Van Tassel-Baska, 1981, p. 5

LEGISLATION

The *School Act* (1988) mandates that:

> Every child of school age is entitled to have access in that school year to an education program. *School Act*, section 3.

A student requiring a special education program is entitled to a program appropriate for the student's needs, age and level of educational achievement.

> School boards are responsible for educating resident students, including those with special needs. *School Act*, section 28.

> School boards are responsible for determining that a student is in need of a special education program. *School Act*, section 29.
>
> A board may determine that a student is, by virtue of the student's behavioural, communicational, intellectual, learning or physical characteristics, or a combination of those characteristics, a student in need of a special education program. *School Act*, section 29(1).

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ALBERTA LEARNING POLICY AND REGULATIONS

Alberta Learning's mandate is to ensure that Alberta students have the opportunity to acquire the knowledge, skills and attitudes needed to be self-reliant, responsible, caring and contributing members of society. To fulfill this mandate, the department develops and administers legislation, regulations and policies related to the governance, funding and delivery of education in the province.

- "Students with special needs" means:
  - students described in section 29(1) of the *Act* as being in need of special education programs because of their behavioural, communicational, intellectual, learning or physical characteristics or
  - students who may require specialized health care services or
  - students who are gifted and talented.

  (See Alberta Education, Policy 1.6.2)

- School authorities are responsible for the:
  - identification, assessment and placement of exceptional students
  - development and implementation of individualized program plans (IPPs)
  - evaluation of the individual progress of exceptional students.

  (See Alberta Education, Policy 1.6.2.)

- School boards are responsible for ensuring that students with exceptional needs receive adequate special education programs, have access to the most enabling setting that meets their needs, have regular opportunities to interact with their peers, enjoy the life of the school and participate in local community activities, and have access to specialized classes and services as required. (See Alberta Education, Policy 1.6.1.)

- School authorities shall develop, keep current and implement written policies and procedures regarding education programs for students with special needs, consistent with provincial policies and procedures. (See Alberta Education, Policy 1.6.2.)

This section of the manual focuses on ways that both districts and schools can carry out the mandate set forth by Alberta Learning to meet the needs of students who are gifted and talented.

DISTRICT ADMINISTRATION OF PROGRAMS

At the district level, school authorities are responsible for providing leadership to ensure appropriate educational programming for students who are gifted and talented. In order to fulfill this role, a planning effort that involves all members of the educational community is required. There are a variety of planning processes available to guide administrators in developing programs that are appropriate for their learning communities. A survey of the literature (Cox et al.,1989; Feldhusen et al., 1989; Gallagher & Gallagher, 1994; Kitano & Kirby, 1986; Treffinger & Sortore, 1992; Van Tassel-Baska, 1981; Van Tassel-Baska et al., 1988) reveals several essential components of program planning for students who are gifted and talented. These components address the following questions.

WHO should be involved in planning at the district level for meeting the needs of students who are gifted and talented?

A first step for district administrators could involve striking a committee of people with interest, expertise and/or responsibility in educating students who are gifted and talented. Although the composition of the committee may differ from one district to another, the committee should have enough breadth to represent a cross-section of those involved in the education of students throughout the district.[3]

Representatives on a planning committee could include:

- district administrators
- school administrators
- teachers (at each division level)
- counsellors
- library or media specialists
- school psychologists
- gifted education specialists
- curriculum specialists
- school board representatives
- parents
- students
- community members
- university representatives.[3]

Keep the committee small enough to be manageable in terms of communication, scheduling and opportunities for participation, but large enough to represent the interests and concerns of the district, and for the work load to be distributed. A larger committee can be divided into sub-committees.[3]

HOW might a planning committee get started?

Once the committee is established, members need to determine the purpose and set goals. Members should review the current *School Act* and existing Alberta Learning policies and guidelines. They should also examine the vision and philosophy of the school district. The philosophy and purpose of the committee need to be consistent with the district vision and philosophy. The goals of the committee will emerge from the district's vision.

Some goals might include:

- examining what is currently in place for students who are gifted and talented
- conducting a needs assessment to determine the number of potential students to be served, the attitudes of teachers toward students who are gifted and talented, the types of giftedness to be addressed, resource availability and the kinds of inservice staff will need to implement a program
- developing a definition of gifted and talented which reflects the provincial definition (See Section 2, page GT.17.)
- developing an identification process (See Section 3, pages GT.35–37.)
- suggesting administrative or organizational alternatives for the purpose of implementing the program
- exploring and selecting curricular options
- considering funding and resource support (people and materials)
- designing an evaluation plan for the delivery of district programs
- drafting an IPP format, together with a set of criteria for evaluating the quality of an IPP
- building support for gifted and talented education
- providing a plan for professional development
- developing an implementation plan indicating the schools or grades to be involved, the sequence of steps the system will take to get program underway, the timelines for meeting the committee's goals.

The district may consider appointing a co-ordinator to manage and direct the work of the committee to ensure its effective operation. These goals should be considered guidelines and are not prescriptive. Each district needs to find a process that will best meet its unique needs and optimize available resources.

It may also be helpful for districts to share their expertise, resources, program models and experiences in planning for students who are gifted and talented. This way, a broader and more comprehensive range of possibilities could emerge.

WHAT are some administrative/organizational alternatives for programming for students who are gifted and talented?

Several organizational options have evolved for educating students who are gifted and talented. Each option has advantages and disadvantages based on philosophical considerations; acceptance by students, parents, communities and teachers; demographics; cost effectiveness and availability of resources. Districts may choose to provide a variety or combination of these options in order to offer a range of opportunities appropriate to the diverse needs of the gifted and talented student population.

Administrative/organizational alternatives include the following.

- Within the regular classroom:
  - differentiated program in the regular classroom. The student receives individualized programming based on an IPP. Differentiation strategies can be found in Section 5.
- Within the community school setting (including the regular classroom cited above):
  - consultant/specialist assistance — differentiated instruction is provided with the help of a specialist in gifted education
  - clustering — grouping several students who are gifted in the same classroom and providing appropriate learning experiences
  - resource room/pull-out — students leave the classroom on a regular basis for differentiated instruction
  - pull-out for specific subject acceleration — students attend classes at a higher grade level in a specific subject area
  - multi-age classroom grouping — students are grouped in a classroom of two or more grades
  - interest classes — students attend classes on topics beyond or outside the regular curriculum; e.g., seminars

  - community mentor program — students work on an individual basis with community members in specific areas of interest (See Section 5, pages GT.179–183.)
  - Advanced Placement or International Baccalaureate — students take university-level courses while attending high school (See Section 5, pages GT.185–187.)
  - special classes — grouping students who are gifted and talented from several classes in the same classroom . . . possibly on a scheduled (part-time each week or full-time) basis.

- Outside the community school:
  - special school; e.g., charter schools — students are placed in a congregated setting and provided with differentiated programming
  - magnet school — students receive specialized instruction in accordance with the school's established alternate program offering; e.g., fine arts
  - summer programs — students attend courses offered by a variety of institutions, such as universities, colleges, technical schools, museums.

No one option will meet the diverse needs of all students who are gifted and talented. Offering a variety of programming options provides flexibility in ensuring that each student has access to the best educational opportunities. The needs of individual students may change and require different programming alternatives. Each identified student who is gifted and talented will have an individualized program plan to give direction in program planning and placement. (See Section 3, pages GT.69–74, for further information on IPPs.)

WHAT are considerations for professional development?

Administrators at the district level need to ensure that teachers and administrators at the school level are aware of the district philosophy and goals regarding the education of students who are gifted and talented. In order to help staff at the school level fulfill district requirements, support for professional development needs to be in place.

Consider:

- personnel to conduct and co-ordinate professional development
- funding for professional development (teacher release time, workshops, consultant fees, supplies, etc.)
- formats for inservice training (workshops, school professional development days, study groups, conferences, university credit courses, consultation with support personnel, in-school sharing of expertise, etc.)
- timelines for provision of identified staff development needs
- evaluation processes to ensure that professional development is consistent with changing needs of the district.

Every district should consider having a formalized professional development plan that reflects these factors.

HOW will programs be evaluated?

The district evaluation plan determines to what extent the goals and objectives for addressing the diverse needs of students who are gifted and talented are being accomplished. Both the evaluation process and results will identify areas of success as well as provide the basis for recommendations for improvement. Effective evaluation includes the following.

- Make an evaluation component an integral part of the initial program design. The purpose for evaluation should be clearly understood by everyone involved before the evaluation process is begun.
- State clearly the goals and objectives which determine the type of data to be collected.
- Collect ongoing data which provide information for the purpose of decision making, both formative and summative.
- Consider all aspects, such as identification, programming options, student outcomes, resources, professional development, etc. Also consider the concerns of the various people involved: students, parents, teachers and administrators.
- Seek input from students, parents, teachers, school and district administrators, resource personnel, board and community members according to areas of involvement.

- Designate the people responsible for co-ordinating and carrying out evaluation.
- State timelines.
- Communicate information and results to all stakeholders.
- Be committed to using the information to improve programming.

There are many evaluation models which can be applied to gifted and talented programming. Districts may refer to Callahan (1993), Davis & Rimm (1989), Maker (1986), Renzulli (1994) and Treffinger & Sortore (1992) for further information.

HOW might support for gifted and talented programming be developed?

> *seeking and implementing solutions that attempt to meet the needs of gifted students [should be] within a context of meeting the needs of all students*
>
> Sapon-Shevin, 1996, p. 198

District administrators need to ensure that programming for giftedness is an integral part of the total education plan for the jurisdiction and not a separate, add-on component.

Some ways for districts to build support for gifted and talented programming initiatives include the following.

- Communicate to parents and community the commitment to support the improvement of education for the diverse needs of all students, including the gifted and talented.
- Promote the awareness and understanding that providing for the needs of students with special needs benefits all students.
- Ensure that parents and other community members are involved in the planning process for meeting the needs of students who are gifted and talented.
- Encourage parental and community involvement as volunteers, mentors, field trip sponsors, guest speakers, etc. (See Section 3, page GT.79, for suggestions for involving parents as volunteers.)
- Involve teachers, parents and community members in the evaluation of gifted programming.
- Work with universities to ensure that strategies for teaching students who are gifted and talented become an essential component of general teacher education programs. This way, the regular classroom teacher gains the skills needed to modify instruction relative to students' individual learning needs, including the gifted and talented.

HOW are students who are identified as gifted and talented reported to Alberta Learning?

School boards are required to report the numbers of students who are identified as gifted and talented to the Alberta Learning, Educational Information Exchange. Guidelines on reporting procedures are provided to school boards annually in the *Student Information System User's Guide*.

HOW are programs for students who are gifted and talented funded?

Funding for students with mild or moderate disabilities, and those who are gifted and talented is included in the Basic Instruction funding. School boards and schools are expected to use the designated special education portion of the Basic Instruction funding to provide programs and services for students who are gifted and talented.

School boards are expected to pool all special education funds and appropriately reallocate them to schools to support special education programs as needed. School boards are not expected to allocate funding on the same basis as they receive it from Alberta Learning. It is recognized that individual per student costs may vary widely and therefore it is the school jurisdiction's responsibility to ensure that special education funds are allocated fairly and equitably.

SCHOOL ADMINISTRATION OF PROGRAMS

At the school level, provision for students who are gifted and talented should be consistent with planning that has taken place at the district level. Every school is a unique learning community that strives to create the best education environment for all its members. The following questions may be helpful in guiding schools in this process.

Be sure to share information about the gifted program within the context of meeting needs of all students in the school and build support for its activities as one would any other program which promotes excellence in your school.

Hultgren, 1990,
p. 7

WHAT steps does the school have to take to meet the needs of students who are gifted and talented?

It is the responsibility of school administrators to establish a clear direction for how the school is going to meet the needs of students who are gifted and talented. This direction will be in accordance with the policies set forth by Alberta Learning and the school district. Each school should have a statement expressing its commitment to meeting the diverse needs of students, including the gifted and talented. In many schools, this statement is developed collaboratively with staff, parents and community as part of the yearly school plan. Schools will then want to consider:

- determining who is responsible for co-ordinating gifted and talented programs; e.g., classroom teacher, resource teacher, consultant, school administrator
- identifying students who are gifted and talented (see Section 3)
- developing IPPs for identified students
- implementing differentiated programming to meet student needs; e.g., models, strategies (see Sections 3, 4 and 5)
- accessing resources and support for classroom teachers
- providing professional development
- evaluating individual student growth (as part of the IPP)
- evaluating various gifted and talented programming options at the school level
- planning for continuous improvement
- celebrating success
- communicating with parents, community members and the district as part of the annual school report.

WHERE will the school obtain support for implementing programs for students who are gifted?

Schools may obtain support from a variety of sources, such as:

- district support personnel (gifted education specialists, psychologists, specialists, curriculum consultants, media specialists)
- universities and colleges
- district resource centres; e.g., public libraries, museums, professional libraries
- parents
- community; e.g., business agencies, professionals, associations
- student expertise

- electronic resources: e.g., Internet
- cultural centres: e.g., symphonies, art galleries, ethnic groups.

HOW *will* the school work with parents and the community?

Parents and community members should be viewed as productive partners in the education of students who are gifted and talented. Ways that schools can work with parents and community members include:

- keeping parents and community members informed about provisions and programming for students with special needs
- providing parent education: learning with and from parents
- asking parents to serve on advisory committees
- having parents and community members share their expertise by organizing individual projects, mentorships, special interest groups, field trips, guest speakers
- making parents and community members aware of support resources, such as counselling, associations, books, etc.

WHAT are desirable characteristics of teachers of gifted and talented?

One important factor in the education of all students, including the gifted and talented, is the teacher. The following are characteristics of successful teachers of the gifted (Feldhusen et al., 1989; Hultgren, 1990; Kitano & Kirby, 1986):

- are highly knowledgeable about teaching and learning
- are enthusiastic life-long learners with a desire for intellectual growth
- are self-confident, unthreatened by strong learners
- are flexible, creative risk takers, tolerant of ambiguity
- strive for excellence in self and others
- have intuitive and emotional rapport with students
- have a sense of humour
- serve as facilitators as well as directors of learning
- have wide background knowledge and specific areas of expertise

- have a belief in and understanding of individual differences
- are positive
- are well-organized, systematic.

WHAT professional development could be organized at the school level?

Professional development is an essential component of effective programming for students who are gifted and talented. It should extend beyond staff to include parents and community members, and will emerge from both individual needs and whole school/community needs. Professional development activities evolve as part of the school's improvement plan and could take a variety of forms, such as:

- capitalizing on staff strengths and expertise
- using this manual to develop awareness
- accessing resource personnel, such as consultants
- disseminating of resource material by the district co-ordinator
- acquiring information from videos, books, articles, etc.
- providing opportunities for teachers to plan and team together
- attending gifted and talented conferences, such as the Society for the Advancement of Gifted Education (SAGE) conference
- joining professional associations, such as the Alberta Teachers' Association's Gifted and Talented Education Council (GTEC)
- subscribing to professional journals, such as *Roeper Review*, *Gifted Child Today*
- participating in inservice courses offered by the district, universities, associations, etc.
- participating in school-based activities, such as professional development days, noon-hour sessions, study groups, etc.

CONCLUSION

Meeting the needs of students who are gifted and talented is the responsibility of school districts and individual schools in Alberta. The process is complex and challenging because of the necessity of involving effective representation of all stakeholders, and because of the diversity of students, teachers, administrators and available resources. It is the intention of this resource to provide educators with useful guidelines for developing programs and strategies to meet this challenge.

SECTION 2: CONCEPTIONS OF GIFTEDNESS

The purpose of this section is to provide broad, conceptual perspectives related to the evolving definition of giftedness and talent.

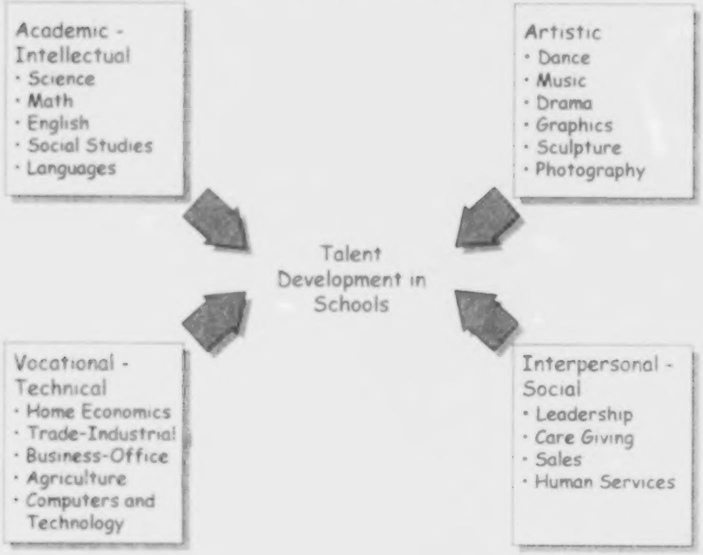
THE EMERGING PARADIGM

What is meant by "giftedness" or "talent" varies. The definition of giftedness is culture-bound and reflects those dimensions that a culture values (Gallagher, 1985).

Traditionally, giftedness has been equated with a high IQ score, simple quantitative index or cut-off point. In the late 1960s, concern about artistic excellence, creativity and specific academic aptitude emerged. By the 1980s, increased interest in the affective domain, multiple intelligences and talent development further broadened the conception. Society's view of human talents and abilities has broadened considerably in the last three decades (Treffinger & Sortore, 1992).

The emerging paradigm views giftedness as having multiple forms and as being diagnostic, developmental and process-oriented rather than stable, unchangeable and equal to a score on an intelligence test. In the emerging paradigm, identification is based on performance rather than on test results. It recognizes the nature and importance of gifts and talents in the arts, vocational domains, social-interpersonal, psychomotor as well as academic-intellectual domains of giftedness. A core belief is that context is crucial to the development of giftedness and talent, which may not be expressed or developed without special intervention or opportunities.

Areas for Talent Identification[4]


Academic - Intellectual
· Science
· Math
· English
· Social Studies
· Languages
Artistic
· Dance
· Music
· Drama
· Graphics
· Sculpture
· Photography
Talent Development in Schools
Vocational - Technical
· Home Economics
· Trade-Industrial
· Business-Office
· Agriculture
· Computers and Technology
Interpersonal - Social
· Leadership
· Care Giving
· Sales
· Human Services

For the purposes of this manual, the terms "gifted" and "talented" are used interchangeably. The term "high-potential student" refers to those learners who have, for a variety of reasons, not as yet demonstrated their gifts and talents through formal identification procedures.

ALBERTA LEARNING DEFINITION OF GIFTEDNESS

In consideration of the emerging paradigm in the area of gifted education, Alberta Learning has adopted the following definition.

> Giftedness is exceptional potential and/or performance across a wide range of abilities in one or more of the following areas:
>
> - general intellectual
> - specific academic
> - creative thinking
> - social
> - musical
> - artistic
> - kinesthetic.

General intellectual ability is characterized by a capacity to acquire information rapidly and think abstractly. Students with general intellectual ability can acquire information quickly and easily recall what they have learned. As a result, they develop large vocabularies and a wide range of general information. In addition to this capacity, students with general intellectual abilities are interested in general principles or "how and why things work." They are capable of being intensely absorbed in what they do. They are easily bored by routine tasks. Some intellectually gifted students may be perfectionistic or extremely emotionally sensitive. Intellectually gifted students are best identified through the use of psychometric measures, such as intelligence tests and benefit from a combination of acceleration, thinking skills enrichment and independent research activities.

Students with specific academic aptitudes have strength in a particular subject, such as mathematics. These students are best identified through subject-matter tests meant for older students. They benefit through opportunities for subject-specific content acceleration and research in their passion areas.

Creative thinking is the ability to come up with many possible ideas to given situations. Students with this particular gift are best recognized through measures of divergent thinking ability which assess a student's fluency, flexibility and originality of ideas. These students benefit from opportunities for creative problem solving, and programs such as the Future Problem-Solving Program and Odyssey of the Mind.

Social talents include those gifted in leadership and interpersonal communication skills. They are best identified through observations of interactions in social situations and benefit from opportunities for social interactions, such as debates, mock judicial proceedings and model parliaments.

Musical ability and intelligence are closely related. Students who are gifted in music have an intense love and fascination for music. The identification process focuses on performance, composition and appreciation as they relate to choral and instrumental categories. Observation of performance and analysis of composition by qualified teachers are first steps in the identification of students gifted in music.

Artistic talents include those gifted in the visual and performing arts. Students are best identified through evaluations of their artistic products by experts. Components of ratings include expression and technical competence. These students benefit by opportunities to pursue their talent areas.

Kinesthetic talents include those gifted in such areas as athletics and dance. Students are best identified through evaluations of their performance by experts. These students benefit from opportunities to pursue their talent areas.

While leadership has not been singled out among the abilities included in the definition of giftedness, it is not to be overlooked. Generally, the characteristics associated with leadership ability (see page GT.45) are similar to those attributes of students with outstanding social talents and strengths in creative thinking. Such students need specially planned educational opportunities to exercise and enhance their talents.

CONCEPTIONS OF GIFTEDNESS

INTRODUCTION

Current definitions of giftedness emphasize multiple forms of giftedness, diversity, inclusiveness, excellence in performance and the importance of context.

This section highlights nine theoretical models that are important considerations in serving students who are gifted and talented. These models reflect the beliefs and values of theorists recognized for their expertise in the area of giftedness. The models are presented in the chronological order in which they developed. They are presented as guides for schools to draw from when developing programs for students who are gifted.

Implications for schools include the following:

- draw on many models according to circumstances and goals
- offer a variety of different activities and services in response to varied student needs, talents, interests and strengths.

The nine theoretical models are summarized in the charts that follow. These charts also summarize the identification procedures and programming options for each model. Each model also identifies a resource that teachers can access for more in-depth information.

Sidney Marland

Concept of Giftedness

In 1972, Sidney Marland, then U.S. Commissioner of Education, presented his committee's definition of giftedness to the U.S. Congress. In addition to high intelligence, this definition includes both demonstrated achievement or potential for achievement in specific academic areas, creative thinking, the fine arts and leadership. Marland's definition follows.

Gifted and talented children are those identified by professionally qualified persons who by virtue of outstanding abilities are capable of high performance. These are children who require differentiated educational programs and services beyond those normally provided by the regular school program in order to realize their contribution to self and society. Children capable of high performance include those with demonstrated achievement and/or potential ability in any one of the following areas:

- general intellectual ability
- specific academic aptitude
- creative or productive thinking
- leadership ability
- visual and performing arts
- psychomotor ability.

Suggested identification procedures and programming options follow.

Identification Procedures	Programming Options
• general intellectual ability – individual psychological assessment – group psychological assessment (administered off level) – standardized achievement tests – teacher ratings – parent ratings	• acceleration by subject • grade skipping • enrichment of regular curriculum; e.g., tiered assignments independent study open-ended questioning techniques small group investigations
• specific academic aptitude – off-level subject specific achievement tests	• acceleration by subject • mentorships, tutorials • enrichment of regular curriculum • cluster grouping
• creative or productive thinking – measures of divergent thinking – scales for measuring creative characteristics – teacher observations	• divergent thinking skills • creative problem-solving skills • Future Problem-Solving Program • Odyssey of the Mind
• leadership ability – scales for rating leadership characteristics – leadership skills inventory	• leadership training programs • debating strategies
• visual and performing arts – teacher observations – specialist observations	• mentorships • individual and small group instruction

Identification Procedures (cont'd) → **Programming Options (cont'd)**

Identification Procedures (cont'd)

- psychomotor ability
  - teacher observations
  - specialist observations

Programming Options (cont'd)

- individual and small group
- mentorships

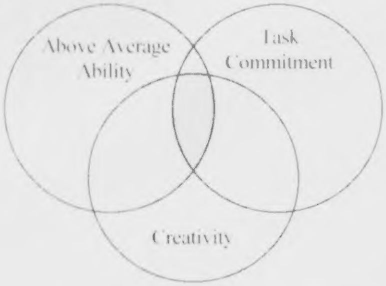
See *Education of the Gifted and Talented, Volume I — Report to the Congress of the United States by the U.S. Commissioner of Education* (1972) by S. P. Marland, Jr., Washington, DC: U.S. Government Printing Office.

Joseph Renzulli

Concept of Giftedness

Renzulli says that gifted behaviour involves interaction of three basic clusters of human traits: above average abilities, high levels of task commitment and high levels of creativity. By above average ability, Renzulli's model focuses on students in the top 15 per cent of intellectual aptitude. Renzulli's concept of task commitment encompasses several characteristics: a learner's ability to take energy and concentrate it on a specific task; e.g., a problem situation, a creative project, a research project; persistence in reaching a goal; drive to achieve; enthusiasm and integration toward a goal when the individual is involved in work of his or her own choosing. Creativity, as defined by Renzulli, relates to a person's ability to produce original, novel and unique ideas or products.

The interaction of these three basic clusters of human traits may result in gifted behaviours in general performance areas, such as mathematics, philosophy, religion or visual arts; or in performance areas as specific as cartooning, mapmaking, playwriting, advertising or agricultural research.



Renzulli's model for educating the gifted, now called the Schoolwide Enrichment Model, is based on his 1978 Three Ring Conception of Giftedness.

Identification Procedures

Status information — both objective and subjective in nature

- individual psychological assessment or group psychological assessment (administered off level)
- teacher nomination Scales for Rating the Behavioral Characteristics of Superior Students (Renzulli, Smith et al.)
- interest inventories
- learning style inventories

Programming Options

- compacting the regular curriculum
- Type I Enrichment (general exploratory activities)
- Type II Enrichment (group training activities)
- Type III Enrichment (individual small-group investigation of real problems)

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Identification Procedures (cont'd) → **Programming Options (cont'd)**

Action information

- teacher observation of the type of dynamic interactions that take place when a student becomes excited about a particular topic, area of study, issue, event or form of creative expression

See *The Schoolwide Enrichment Model: A How-To Guide for Educational Excellence* (2nd edition) (1997) by J. S. Renzulli & S. M. Reis. Mansfield Center, CT: Creative Learning Press, Inc.

Howard Gardner

Concept of Giftedness

Gardner (1983) refers to human cognitive competence as a set of abilities, talents or mental skills which he calls intelligences. He defines intelligence as an ability or set of abilities that permits an individual to solve problems or fashion products that are of consequence in a particular cultural setting. Multiple intelligence theory supports a pluralistic view of intelligence and challenges the notion of general intelligence on which most current models of intelligence are based.

Gardner's Theory of Multiple Intelligences proposes eight intelligences:

Verbal-Linguistic Intelligence: The ability to use words effectively both orally and in writing; e.g., writer, orator.

Logical-Mathematical Intelligence: The ability to use numbers effectively and to see logical relationships and patterns; e.g., mathematician, scientist, computer programmer.

Visual-Spatial Intelligence: The ability to visualize and to orient oneself in the world; e.g., guide, hunter, architect, artist.

Musical-Rhythmic Intelligence: The capacity to perceive, discriminate, transform and express musical forms; e.g., composer, musician.

Bodily-Kinesthetic Intelligence: The ability to use one's body to express ideas, to make things with hands and to develop physical skills; e.g., actor, craftsperson, athlete.

Interpersonal Intelligence: The ability to perceive and make distinctions in the moods, intentions, motivations and feelings of other people; e.g., counsellor, political leader.

Intrapersonal Intelligence: Self-knowledge and the ability to act adaptively on the basis of that knowledge; e.g., psychotherapist, religious leader.

Naturalist Intelligence: The ability to identify and appreciate various categories of flora and fauna.

Gardner says that giftedness results from inborn abilities in interaction with an appropriately supportive environment. He assumes that the majority of children have some talent area or intelligence which can be developed through focused curriculum attention. He avoids identifying children as gifted, favouring instead to use diagnostic information to determine strengths that can be used to develop appropriate curriculum.

Gardner believes that schools traditionally value verbal-linguistic and logical-mathematical intelligence, which hinders learning for students for whom these are not the dominant intelligences. Gardner says that a variety of approaches to learning should be used and that assessment should be conducted within the context of the natural learning environment.

Suggested identification procedures and programming options follow.

Identification Procedures

Verbal-Linguistic
- individual intelligence test (verbal battery) or group cognitive abilities test (verbal-battery) administered off level
- standardized individual or group achievement test (reading/written language sub-tests) administered off level
- multiple intelligences rating scales, profiles, surveys or inventories (see Appendix 1, pages GT.219–221)
- teacher-made tests or assignments
- teacher observation
- student portfolios

Programming Options

Acceleration through:
- tiered assignments
- course advancement
- concurrent enrollment
- Advanced Placement programs
- curriculum compacting
- flexible skills grouping
- continuous progress
- out-of-level testing/challenge exams

Enrichment through:
- high-level questioning
- Junior Great Books
- Odyssey of the Mind
- simulations
- Future Problem-Solving Program
- mentorships
- interest centres/groups
- interdisciplinary studies
- International Baccalaureate courses
- creative thinking/problem-solving exercises
- critical thinking/decision-making exercises
- individual/small-group investigations
- contests, competitions

Logical-Mathematical
- individual intelligence test (arithmetic sub-tests, non-verbal/performance battery sub-tests) or group cognitive abilities test (quantitative battery) administered off level
- standardized individual or group achievement test (math sub-tests) administered off level
- multiple intelligences rating scales, profiles, surveys, inventories (see Appendix 1, pages GT.219–221)
- teacher-made tests or assignments
- teacher observation
- student portfolios

Acceleration through:
- tiered assignments
- course advancement
- concurrent enrollment
- curriculum compacting
- flexible skills grouping
- Advanced Placement programs
- continuous progress
- out-of-level testing/challenge exams

Enrichment through:
- high-level questioning
- Artifact Box Exchange
- Odyssey of the Mind
- Future Problem-Solving Program
- interdisciplinary studies
- International Baccalaureate program
- critical thinking/decision-making exercises
- contests, competitions, tournaments
- individual/small-group investigations

Identification Procedures (cont'd)	Programming Options (cont'd)
Visual-Spatial • individual intelligence test (non-verbal/performance battery, abstract/visual reasoning sub-tests) or group cognitive abilities test (non-verbal battery) administered off level • multiple intelligences rating scales, profiles, surveys, inventories (see Appendix 1, pages GT.219-221) • adjudicated art exhibitions • teacher/specialist observations • student portfolios	Acceleration through: • concurrent enrollment • Advanced Placement programs • tiered assignments • course advancement • continuous progress Enrichment through: • art exhibitions, contests • mentorships • creative thinking/visualization exercises • extracurricular offerings/summer programs • museum programs • interdisciplinary studies
Musical-Rhythmic • multiple intelligences rating scales, profiles, surveys, inventories (see Appendix 1, pages GT.219-221) • performances • teacher/specialist observations • student portfolios	Acceleration through: • concurrent enrollment • Advanced Placement programs • tiered assignments • course advancement • continuous progress Enrichment through: • performances, competitions • mentorships • field trips • interdisciplinary studies • extracurricular offerings/summer programs • music classes
Bodily-Kinesthetic • multiple intelligence rating scales, profiles, surveys, inventories (see Appendix 1, pages GT.219-221) • performances, exhibitions • teacher/specialist observations • student portfolios	Acceleration through: • concurrent enrollment • course advancement • tiered assignments Enrichment through: • performing arts productions • contests, competitions, tournaments • Odyssey of the Mind • mentorships • extracurricular offerings • interdisciplinary studies

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Identification Procedures (cont'd)	Programming Options (cont'd)
Interpersonal • multiple intelligences rating scales, profiles, surveys, inventories (see Appendix 1, pages GT.219–221) • teacher/counsellor observations • student portfolios	Enrichment through: • school/community service • leadership training • creative thinking/problem-solving exercises • co-operative learning activities • critical thinking/decision-making exercises • mentorships • simulations • interdisciplinary studies
Intrapersonal • multiple intelligences rating scales, profiles, surveys, inventories (see Appendix 1, pages GT.219–221) • teacher/counsellor observations • student portfolios	Enrichment through: • independent study • critical thinking/decision-making exercises • mentorships • learning contracts/management plans
Naturalist • multiple intelligences rating scales, profiles, surveys, inventories (see Appendix 1, pages GT.219–221) • teacher/specialist observations • student portfolios	Acceleration through: • concurrent enrollment • tiered assignments • Advanced Placement programs • course advancement • out-of-level testing/challenge exams Enrichment through: • independent study • field studies • critical thinking exercises • mentorships • interdisciplinary studies

See *Frames of Mind: The Theory of Multiple Intelligences* (1983) by H. Gardner. New York, NY: Basic Books, Inc. and *Intelligence Reframed: Multiple Intelligences for the 21st Century* (1999) by H. Gardner. New York, NY: Basic Books.

Robert Sternberg

Concept of Giftedness

Sternberg says that giftedness cannot possibly be captured by a single number. He broadened the definition of giftedness through his Triarchic Theory of Human Intelligence which identifies three kinds of giftedness:

Analytic Giftedness: Giftedness in analytic skills involves being able to dissect a problem and understand its parts.

Synthetic Giftedness: Synthetic giftedness is seen in people who are insightful, intuitive, creative or just adept at coping with relatively novel situations.

Practical Giftedness: Practical giftedness involves applying analytical or synthetic ability to everyday pragmatic situations.[8]

Sternberg's Triarchic Abilities Test is in the process of being developed.

Suggested identification procedures and programming options follow.

Identification Procedures	Programming Options
analytical abilities are assessed by having students define unknown words from context cues	opportunities to use analytic abilities
synthetic abilities are assessed through the use of novel, verbal reasoning problems	opportunities to use synthetic abilities
practical abilities are assessed by recognizing fallacies in advertisements and planning navigational routes	opportunities to use practical abilities

Until the Triarchic Abilities Test becomes available, teachers may wish to design opportunities for students to demonstrate analytic, synthetic and practical abilities, and observe their performance.

See "A Triarchic View of Giftedness: Theory and Practice" by R. Sternberg, in *Handbook of Gifted Education* (2nd edition) (1997), by N. Colangelo & G. A. Davis (eds.), Needham Heights, MA: Allyn & Bacon.

Donald Treffinger

Concept of Giftedness

Treffinger acknowledges the rising concerns that the traditional definition of giftedness has spawned. Among the numerous limitations of the traditional view, Treffinger highlights the importance of understanding that the dimensions of ability are not "fixed and predetermined, absolutely present or absent in any person over time and in all circumstances" (Treffinger, 1991). Similar to Renzulli, Treffinger defines giftedness as the interaction of above average ability, creativity and task commitment. Treffinger has also collaborated with John Feldhusen on the Talent Identification Model (Treffinger & Feldhusen, 1980).

Suggested identification procedures and programming options follow.

Identification Procedures

- de-emphasize selection of students: focus on expanded search for the unique characteristics or indicators of behaviour that can be related to instructional planning. Assessment must be a qualitative process, not merely a quantitative or statistical approach to decision making (NOT inclusion exclusion)
- document characteristics (teacher observation) (portfolios of student work)
- individual assessments
- group assessments
- standardized achievement tests
- grades
- parent referral
- peer referral
- teacher referral
- self-nomination

Programming Options

- individualized basics
- appropriate enrichment
- effective acceleration
- independent (individual or small group) self-directed study
- personal and social growth through reflective writing; discussion groups that address social, interpersonal needs
- career and futures: career guidance sessions, mentorships, work experiences in area of interest

See *The Programming for Giftedness Series* (three volumes) (1992) by D. J. Treffinger & M. R. Sortore, Sarasota, FL: Center for Creative Learning and "Talent Recognition and Development: Successor to Gifted Education," (1996) by D. J. Treffinger & J. F. Feldhusen, *Journal for the Education of the Gifted*, 19, pp. 181–193.

Francoys Gagné

Concept of Giftedness

Gagné (1995) distinguishes between giftedness and talent in his differentiated model of giftedness and talent. He says giftedness refers to high natural, partly inborn abilities which develop naturally in the course of daily activities. Talent refers to a high level of performance in systematically developed skills in a particular field of human endeavour; skills that require considerable training, learning and practice to master.

Gagné identifies four aptitude domains representing giftedness: intellectual, creative, socio-affective and sensorimotor; and as many fields of talent as there are fields of human activity; e.g., academics, trades and craft, technology, arts, social action, business, athletics and sports. Catalysts (positive or negative impact) for talent development include: motivation, temperament/personality and environmental factors (surroundings, persons, understanding, events).

Suggested identification procedures and programming options follow.

Identification Procedures

- observation of ease of learning in each of the aptitude domains

Programming Options

- systematic learning, training and practice in areas of giftedness (both within and beyond school) to develop talent
- accent on curriculum compacting and acceleration to respond to naturally faster learning pace

See "Towards a Differentiated Model of Giftedness and Talent" by F. Gagné, in *Handbook of Gifted Education* (1991), edited by N. Colangelo & G. A. Davis.

Julian Stanley

Concept of Giftedness

Since 1971, Julian Stanley and colleagues in the Study of Mathematically Precocious Youth (SMPY) at Johns Hopkins University have pioneered a domain-specific approach to giftedness. Recognizing that a composite score on a measure of general intelligence masks specific areas of strength, this approach advocates focusing on talent development in specific domains, such as mathematics, languages and social studies.

Gifts in each specific domain are identified through the use of measures in each domain that differentiate among students. This is typically accomplished by having students take measures meant for older students. For example, mathematically gifted seventh graders are identified through administration of the mathematics portion of the Scholastic Aptitude Test, which is usually administered to university-bound eleventh and twelfth graders. Verbally gifted seventh graders would be identified by their performance on the verbal portion of the Scholastic Aptitude Test.

Once identified, students are encouraged to develop their domain-specific talents by participating in a variety of accelerative options, including: university coursework, special academic summer courses, special schools, Advanced Placement courses, fast-paced classes and grade skipping. Numerous research studies have documented the effectiveness of this approach. Students benefit academically and adjust socially and emotionally to these accelerative experiences.

Suggested identification procedures and programming options follow.

Identification Procedures

- Step 1: top three-to-five per cent on in-grade level standardized test
- Step 2: administration of standardized test three-to-four years above grade level

Programming Options

- smorgasbord of accelerative opportunities
- early entrance to university, especially in special programs for precocious youth
- part-time university study
- distance learning university courses
- advanced placement
- fast-paced classes in domain using Diagnostic Testing Prescriptive Instruction Model
- subject matter acceleration
- grade skipping
- special state-supported high schools

See *Mathematical Talent: Discovery, Description, and Development* (1974) by J. C. Stanley, D. P. Keating & L. H. Fox (eds.), Baltimore, MD: Johns Hopkins University Press.

John Feldhusen

Concept of Giftedness

Talent Identification and Development in Education

John Feldhusen has pioneered the Talent Identification and Development in Education (TIDE) model. This approach attempts to foster talent development in all youth rather than focusing on a small percentage of students who have met the arbitrary cut-off score criterion often used to label students as gifted. The approach recognizes that talent development involves a combination of aptitudes, acquired knowledge and personality characteristics.

Four broad areas for talent development in schools have been identified: academic-intellectual, artistic, vocational-technical and interpersonal-social. The TIDE model focuses on using a variety of assessment techniques to determine a student's profile, and talent strengths and weaknesses. The assessment information is used to develop an individualized growth plan for each student.

Suggested identification procedures and programming options follow.

Identification Procedures

- profile of strengths and weaknesses derived from multiple sources of data, including standardized tests, ratings and student performance

Programming Options

- individually designed program plan to facilitate talent development

See *Talent Identification and Development in Education (TIDE)* (1992) by J. F. Feldhusen. Sarasota, FL: Center for Creative Learning.

George Betts

Concept of Giftedness

Betts (1985) developed the Autonomous Learner Model to meet the cognitive, social and emotional needs of gifted and talented students (Betts & Knapp, 1981). As its name implies, the goal of the autonomous learner model is to have participants emerge as independent, self-directed learners. The model consists of experiences centered around five dimensions: orientation, individual development, enrichment activities, seminars and in-depth study. The orientation dimension provides opportunities for students to understand the nature of giftedness, develop self-awareness, promote group cohesion, and understand the opportunities and responsibilities regarding participation in the program. The individual development dimension provides opportunities for students to explore creative problem solving, self-concept development, interpersonal communication skills and career development. The enrichment activities dimension provides opportunities for learning content through explorations, investigations, cultural activities, service activities and adventure trips. The seminar dimension provides opportunities for seminars on futuristic, controversial and interesting topics. The in-depth study dimension provides opportunities for a learner to conduct, present and evaluate an intensive study of a passion area.

Suggested identification procedures and programming options follow.

Identification Procedures

- **Intellectually Gifted**
  high IQ or high achievement
- **Creatively Gifted**
  high divergent thinking abilities
- **Talented**
  specific area of talent, such as math or music

Programming Options

- orientation dimension
- individual development dimension
- enrichment activities dimension
- seminar dimension
- in-depth study dimension

See *Autonomous Learner Model: Optimizing Ability* (revised, expanded and updated edition) (1999) by G. T. Betts & J. K. Kercher , Greeley, CO: Autonomous Learning Publications and Specialists.

SECTION 3: IDENTIFICATION

Identification is the process of recognizing students' needs, strengths, talents and interests, in order to design effective ways to nurture and enhance their potentials. Before teachers can develop, implement and evaluate programming, there must be flexible, inclusive and diagnostic screening, and identification procedures in place. Identification must be compatible with both the definition applied and the services to be offered.

> *If the gates to excellence are opened and closed only as a function of the abilities typically considered, we run the risk of opening them to people who will not be particularly outstanding in their chosen career, and of closing these gates on some of the most able children, who will be blocked from making contributions that they potentially could make.*
>
> Sternberg &
> Clinkenbeard
> 1995
> pp. 255–256

TOWARD AN INCLUSIVE IDENTIFICATION PROCESS

Many researchers and practitioners have called attention to the need for a paradigm shift and changes in identification procedures (Feldhusen, 1996; Feldman, 1991; Gardner, 1993; Gubbins, 1996; Maker, 1996; Renzulli, 1995; Sternberg & Clinkenbeard, 1995; Sternberg & Zhang, 1995; Treffinger & Feldhusen, 1996; Treffinger & Sortore, 1992; Van Tassel-Baska, 1995).

This section focuses on learner characteristics and identification procedures as they relate to students who are gifted and talented, including high-potential, high-risk students and gifted minority students. Contents cover:

- guidelines to inclusive identification processes
- indicators to assist in recognizing intellectual and affective characteristics
- characteristics and behaviours of young students who are gifted and talented
- concerns related to the characteristic strengths associated with giftedness
- gathering and recording many kinds of data: formal identification of students who are gifted and talented
- developing individualized program plans (IPPs)
- communicating with parents of a child who is gifted
- parent involvement in the IPP process
- questions to help parents communicate effectively with the school
- involving parents as volunteers
- characteristics and identification procedures for underserved populations
- conclusion
- identification process resources.

GUIDELINES TO INCLUSIVE IDENTIFICATION PROCESSES

Identification is a linking process which must be compatible with the definition applied and the services to be offered. It is inconsistent to have in place a multidimensional definition of giftedness and talent along with a single criterion identification procedure for programming which primarily addresses a single (but different) area of talent or strength. For example, if the definition adopted by a school system is the one recommended by Alberta Learning, and the identification procedure is the use of a standardized IQ test for student placement in a creative writing program, then both identification and programming are inappropriate.

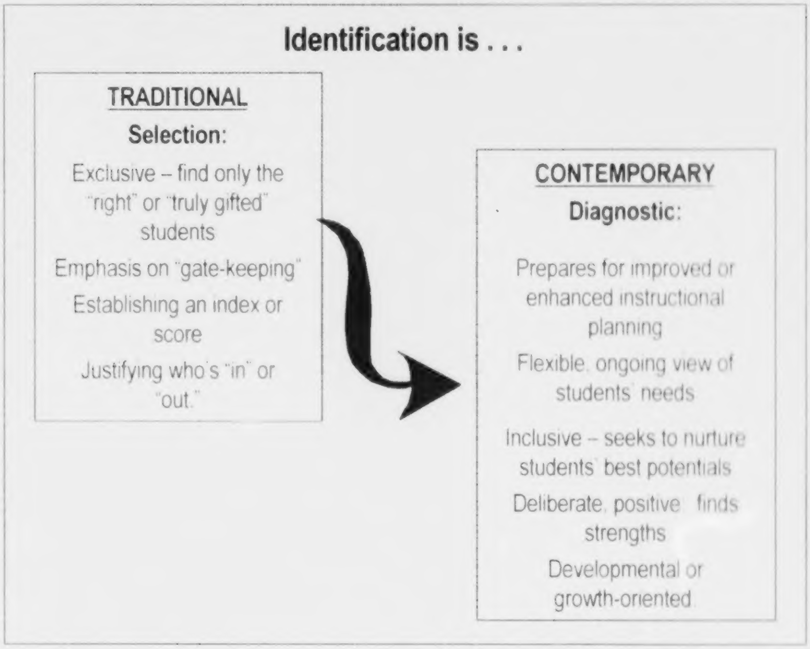
Too often, narrow, fixed identification procedures which focus only on selection or placement, attempt to adapt the learner to the program rather than to adapt the learning environment to the student's individual needs. This does not mean that specific selection or placement criteria are always inappropriate.[7]

A successful instructional service or activity has in place clear, well-established prerequisites for successful performance and an identification procedure which addresses those prerequisites with valid and reliable indicators as criteria. For example, in selecting students to participate in an advanced mathematics program, the criteria should be related specifically to their skills, reasoning ability, motivation and interests in the area of mathematics that is the focus of the program.[7]

Clearly, there is no one right construct or measure, or set of constructs or measures that schools ought to use in identifying high-potential learners. What is important is that teachers develop an understanding of their conception of giftedness and talent, and what they value in serving high-potential learners. Once teachers, schools and school districts know what it is they value, they can seek a theory or combination of theories to help them realize this system of values.

What school staff value guides them in their identification procedures and instructional services. For example, if school staff believe that rapid learning produces large academic gains for students, then acceleration makes sense. If school staff believe that the depth and care students take in probing into what they learn is important, then enrichment would be preferable. If both are of high priority, they would use a combination in their instructional programming. Whatever teachers do, they should ensure that the values expressed in the instructional program are the same as those expressed in the identification program.

Some Key Differences Between Traditional and Contemporary Identification Paradigms[8]



Identification is . . .

TRADITIONAL

Selection:

Exclusive – find only the "right" or "truly gifted" students

Emphasis on "gate-keeping"

Establishing an index or score

Justifying who's "in" or "out."

CONTEMPORARY

Diagnostic:

Prepares for improved or enhanced instructional planning

Flexible, ongoing view of students' needs

Inclusive – seeks to nurture students' best potentials

Deliberate, positive; finds strengths

Developmental or growth-oriented

Appropriate identification practices:

- are consistent with broader conceptions of giftedness and talent
- are based on the best available research and recommendations
- are consistent with a conceptual framework that can be used to design all phases of programming for students who are gifted and talented
- are based on the understanding that identification is a continuous assessment process
- find and develop exceptional potential in students
- use appropriate assessment of data from multiple sources
- involve students in the diagnostic process of seeing and understanding their own strengths and sustained interests
- express the same values as those expressed in the instructional program
- are valid and reliable measures of the abilities found in and valued by a variety of high-potential, underserved populations
- achieve an equitable representation of ethnic, cultural and language minority students
- encourage changes in curriculum and instruction, and in the perceptions of those implementing, evaluating and being served by special programming, including parents
- can be implemented effectively for school districts with limited resources

- provide a way to address not only academic needs but social, emotional and psychological needs.

Identification procedures make a deliberate effort to search for and identify the unique needs of students, based on their interests, strengths and talents. Productive identification procedures should address the following fundamental questions.[9]

- What strengths or talents do we see in this student?
- What is happening now in the student's program?
- What modifications (if any) are necessary or desirable?
- What data give us a full picture of this student (academic, social, emotional, psychological)?
- What additional data are needed?
- What particular interests and accomplishments tell us about this student's learning needs?
- How does information about the student's ability, interests and motivation guide us in instructional planning?

INDICATORS TO ASSIST IN RECOGNIZING INTELLECTUAL AND AFFECTIVE CHARACTERISTICS

Clusters of traits believed to be characteristics of students who are gifted and talented have been listed since early in the century. Highly able learners commonly demonstrate some, but not necessarily all, of the characteristics typically described in the literature. In identifying characteristics of students who are gifted and talented, it is important to remember the following.[10] Students who are gifted and talented:

- do not form a homogeneous group
- possess a unique combination of characteristics and abilities
- do not necessarily possess all the characteristics on a checklist or rating scale
- vary according to which of these commonly occurring characteristics they possess and the intensity of those characteristics
- encompass a wide range of individual differences — they may be more different from each other than alike
- should not be stereotyped according to commonly occurring characteristics; e.g., attributing to a particular student anticipated characteristics beyond those that have been observed.

INTELLECTUAL CHARACTERISTICS

Several intellectual characteristics have been identified which appear to be common to high-potential students. These include the ability to:

- meaningfully manipulate a symbol system
- learn at a rapid rate
- think logically, given appropriate data
- use stored knowledge to solve problems
- reason by analogy, as in comparing an unknown and complex process or scenario to a familiar one; e.g., design and build a robotic arm to function as a human arm
- extend or extrapolate knowledge to new situations or applications.

The following chart includes frequently recognized general traits, aptitudes or behaviours usually included in any list of intellectual characteristics ascribed to high-potential learners. Each trait is described and the general description is followed by examples of how the behaviour might be demonstrated.

Intellectual Characteristics of Students who are Gifted and Talented[11]

Trait, Aptitude or Behaviour	General Description	Examples of Demonstrated Behaviours
Motivation — evidence of desire to learn	Initiate, direct and sustain individual or group behaviour in order to satisfy a need or attain a goal	Require little external motivation to follow through on work that initially excites. Demonstrate persistence in pursuing or completing self-selected tasks (may be culturally influenced), evident in school or non-school activities. Enthusiastic learners, take great pleasure in intellectual activity, have aspiration to be somebody or something.
Interests — advanced, intense, sometimes unusual interests	Activities, avocations, subjects that have special worth or significance and are given special attention	Unusual or advanced interests in a topic or activity, self-starters, pursue an activity unceasingly beyond the group.
Problem-solving Ability — effective, often inventive strategies for recognizing and solving problems	Process of determining a correct sequence of alternatives leading to a desired goal or to successful completion or performance of a task	Unusual ability to devise or adopt a systematic strategy to solve problems and change the strategy if it is not working, create new designs, inventors, demonstrate logical thinking abilities. Rapid insight into cause and effect relationships.

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Trait, Aptitude or Behaviour (cont'd)	General Description (cont'd)	Examples of Demonstrated Behaviours (cont'd)
Memory — large storehouse of information on school or non-school topics	Exceptional ability to retain and retrieve information	Already know, need only one or two repetitions for mastery, have a wealth of information about school and non-school topics, pay attention to details, manipulate information.
Inquiry — questions, experiments, explores	Method or process of seeking knowledge, understanding or information	Ask unusual questions for age, play around with ideas, extensive exploratory behaviours directed toward eliciting information about materials, devices or situations. Take less for granted, seek "how" and "why."
Reasoning — logical approach to figuring out solutions	Highly conscious, directed, controlled, active, intentional, forward-looking and goal-oriented thought	Show a ready grasp of underlying principles which foster the ability to make generalizations and use metaphors and analogies; can think things through in a logical manner; critical thinkers; readily perceive similarities, differences and inconstancies; ability to think things through and come up with a plausible answer.
Imagination/ Creativity — ability to generate highly original ideas, produce many ideas	Process of forming mental images of objects, qualities, situations or relationships which aren't immediately apparent to the senses, problem solving through non-traditional patterns of thinking	Show exceptional ingenuity in using everyday materials, independence in thinking, are keenly observant, have wild, seemingly silly ideas, fluent, flexible producers of ideas, highly curious.

Characteristics of Divergent and Convergent Thinkers

It may be helpful for teachers to differentiate between two main types of students who are gifted and talented — divergent and convergent thinkers.

Divergent thinkers like to explore in a number of directions and enjoy making imaginative, intuitive and flexible leaps of insight. They are often highly sensitive to stimuli in the world around them and may choose to spend hours pursuing particularly creative products and performances or unusual, unique and alternative ways of learning.[12]

Convergent thinkers enjoy and are skilled in processing information in a linear, logical sequence and are interested in obtaining the one "correct" answer to a problem. They are interested in factual information and are high achievers in subjects in which there are exact and predictable solutions. They prefer to progress directly onward and upward in their learning. Essentially, standardized intelligence tests are constructed to identify convergent thinkers.[12]

The following checklists may help teachers differentiate between divergent-creative and convergent-academic gifted students.[13]

✓	**Divergent-creative students may demonstrate a number of the following:**
	sensitivity to people and problems
	rapid production and fluency of ideas
	rapid verbalization and retrieval of ideas
	quick reactions and flexibility to change
	flexibility in abstract conceptualizations
	curiosity about many things
	facility in redefining problems
	high levels of energy and perseverance
	originality in humourous responses
	elaboration ability of outstanding quality
	ease in planning concepts and making accurate deductions
	ease in translating information quickly into visual graphics
	originality in solving unusual problems
	ability to synthesize diffuse information into cohesive, smaller units
	motivation only when interested

✓	**Convergent-academic students may demonstrate a number of the following:**
	prodigious memory with rapid recall
	preference for working alone in one or more subject areas
	enjoyment of problem solving, even when solutions are elusive
	motivation in subjects, even when not their favourite
	conformity and acceptance of authority
	interest in academic subjects
	interest in many hobbies outside class
	ability to weigh and judge the best alternatives
	preferences for immediate feedback

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George Betts has defined two similar sub-groups:[14]

- **the intellectually gifted** — those who have intellectual abilities superior to other students in the school system and who will usually score highly on measures of achievement and intelligence
- **the creatively gifted** — those who have creative thinking abilities superior to other students in the school system and who may not score as highly as the intellectually gifted on tests of achievement and intelligence, but will score higher on measurements of creativity than the general population.

Creativity[15]

creativity is the ability

- *to create*
- *to find new meanings*
- *to deal with new relationships*

Dalton, 1985
p. 1

Definitions of creativity have been refined over the years. Some recent definitions are quite complex. Creativity implies learning through discovery, invention, innovation, imagination, experimentation and exploration. It involves more than intellectual ability and includes the whole personality in the co-operation of the thinking, feeling, sensing and intuitive functions. Current views link it closely with self-actualization — realizing and expressing one's own uniqueness and complexity.

Eight commonly identified areas of creativity can be divided into two characteristic lists, one with the four intellectual (thinking) abilities, and one with the four affective (feeling) abilities.

Characteristics of Creativity in Intellectual Abilities	Characteristics of Creativity in Affective Abilities
Fluency (quantity) • generating a number of relevant responses • following a flow of thought	***Curiosity (inquisitiveness)*** • wondering about an idea and toying with it • discovering and exploring
Flexibility (categories) • approaching things in alternative ways • changing categories	***Complexity (challenge)*** • seeking many alternatives • doing things in intricate ways • bringing structure out of chaos • seeing missing parts between what is and what could be

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Creativity is more than intelligence and results from the syntheses of all our brain's functions, 'the knowing' that is processed internally and that which comes to us from outside our system. At least four areas of creativity are being studied: creativity as rational thought, as unique products, as high levels of mental health and as an intuitive spark. We must understand all of these areas if we are to understand creativity, for it is the integration of all these abilities that allows us to create. Creativity is a holistic concept.

Clark, 1992, cited in Department of Education, State of Victoria, 1996, p. 13

Characteristics of Creativity in Intellectual Abilities	Characteristics of Creativity in Affective Abilities
Originality (new) • producing novel, unique or clever ideas • combining known ideas into a new form • creating the unusual	***Risk taking (courage)*** • tolerating ambiguity • a willingness to take a chance and guess • a willingness to express ideas to others • having the courage to expose self to criticism and defend oneself
Elaboration (adding on to) • expanding on basic concepts • building up groups of related ideas	***Imagination (intuition)*** • daydreaming or fantasizing • dreaming about things that never happened • projecting into the feelings of others • putting oneself into another time or place

One of the basic characteristics of the gifted is their intensity and an expanded field of their subjective experience. The intensity, in particular, must be understood as a qualitatively distinct characteristic. It is not a matter of degree but of a different quality of experiencing: vivid, absorbing, penetrating, encompassing, complex, commanding — a way of being quiveringly alive.

Piechowski, 1992, p. 181

AFFECTIVE CHARACTERISTICS

Emotional Development

The importance of the emotional aspect of giftedness has long been recognized. Individuals who are gifted, because of their greater facility with abstract reasoning, have complex inner lives, early ethical concerns and heightened awareness of the world. Intellectual complexity gives rise to emotional depth and complexity. In adolescence, emotional growth in students who are gifted may result in a greater awareness of one's real self, a focus on inner growth through searching, questioning and carrying on an inner dialogue, an understanding of feelings and emotions, and an empathic approach to others. In recognizing specific characteristics of students who are gifted, it is important to understand that these students not only think differently from their peers, they also feel differently.

One theory (Dabrowski, 1964, 1972) which explains the emotional development of the gifted and talented suggests that individuals who are gifted have more pronounced responses to various types of stimuli. This phenomenon has been translated as overexcitability, which comes in five varieties:

- psychomotor — is characterized by an excess of physical energy and hyperactivity
- sensual — is characterized by extreme pleasure in using one's senses

- intellectual — is characterized by an intense interest in a person's metacognitive processes
- imaginational — is characterized by heightened ability to visualize and role play
- emotional — is characterized by intense concern about relationships with others and the universe.

Of these overexcitabilities, the emotional variety is most prominent among students who are gifted and talented.

Overexcitabilities (OEs)

Individuals may experience one or more of these OEs at varying degrees of intensity. The greater the strength of the OEs, the greater the developmental potential for following an ethical, compassionate path in adulthood (Lysy & Piechowski, 1983; Piechowski, 1979). Because persons who are gifted show more intense overexcitabilities, they are more driven in these areas. In moving toward self-knowledge and self-actualization, inner turmoil, despair, intense emotional growth and self-examination are part of changing and growing, and are necessary for personal growth and development (Webb, 1993).

Sensitivity, intensity, perfectionism and introversion are all aspects of emotional overexcitability. Therefore, students who are gifted, who exhibit high degrees of sensitivity are endowed with high emotional OE (Silverman, 1994). Intensity, while a strong indicator of emotional OE, has been used synonymously with all the OEs (Kitano, 1990; Lind, 1993). Perfectionism begins as a facet of emotional OE, but can evolve into the drive for self-perfection, moving the individual toward higher-level development (Silverman, 1990). Introversion, often perceived negatively in our extroverted society, is actually a developmentally positive trait (Silverman, 1994).

Emotional sensitivity and intensity — sometimes prominent and sometimes hidden — are two basic characteristics which distinguish most students who are gifted, account for their vulnerabilities in childhood and get them in trouble at school. When they see themselves as different from others, they begin to doubt themselves, asking, "What is wrong with me?" These creative individuals live at a level of intensity unknown to others. Their intense concern with moral issues, concern for others and probing existential questions can give them cause for concern because these preoccupations are so different from those of their peers (Dabrowski, 1972). Rather than view this as a neurotic imbalance, teachers must help students who are gifted and talented understand their potential for further growth.

The following chart lists the affective characteristics or emotional traits of many but not all students who are gifted and talented (Baska, 1989; Clark, 1988; Dabrowski, 1979/1994; Goleman, 1995; Piechowski & Miller, 1995; Silverman, 1994; Van Tassel-Baska, 1989; Webb, 1993. Additional source: Department of Education, State of Victoria, 1996).

Affective Characteristics of Students who are Gifted

Characteristic	General Description
Heightened Sensitivity and Empathy	compassion, considerateness and understanding of others; protective, nurturing; easily moved to tears; feel others' feelings; sensitive to injustice, criticism, pain; strong need for consistency between values and actions within self and others; caring, understanding, forming strong attachments; empowering others; aesthetic sensitivity (appreciation for complexity in works of art and ability to interpret works of art); ability to read non-verbal cues; extremely observant
Heightened Intensity of Experience	energetic, enthusiastic; intensely absorbed in various pursuits; vivid imagination; emotional vulnerability; emotional intensity (experiences emotions strongly and may be emotionally reactive); strong attachments and commitments; high expectations of self and others
Perfectionism	high achievers; exhibit high personal standards; set unrealistic expectations; demonstrate persistence, perseverance and enthusiastic devotion to work; give up if own standards are not met or if a mistake is made; self-evaluative and self-judging; have feelings of inadequacy and inferiority, and desire praise and reassurance; become extremely defensive if given criticism; less tolerant of imperfection in others; procrastinate
Introversion	have deep feelings; are reflective and introspective; focus on inner growth through searching, questioning and exercising self-corrective judgement; have knowledge about emotions; may withdraw into themselves rather than acting out aggressively toward others
Superior Humour	convey and pick up on humour quickly and well; ability to synthesize key ideas or problems in complex situations in a humorous way; exceptional sense of timing in words and gestures; keen sense of humour that may be gentle or hostile; large accumulation of information about emotions; capacity for seeing the unusual; uncommon emotional depth; openness to experiences; heightened sensory awareness
Moral Sensitivity and Integrity	emotional sensitivity; innate sense of right and wrong; complex inner life; early ethical concerns; heightened awareness of the world; advanced moral reasoning and judgement; high moral values; empathic attitude towards others; tolerance (not aggression); responsibility for others and self; a just attitude (treating everybody by the same standards); truthfulness; authenticity; courage in the face of adversity; altruism and idealism (desire to enhance caring and civility in the community and in society at large)

LEADERSHIP CHARACTERISTICS[16]

Because of their profound emotional intelligence, sensitivity, awareness and potential for self-actualization, students who are gifted often exhibit advanced leadership skills. The following attributes are indicative of an exemplary leader. Such gifted students:

- may carry responsibility well — can be counted on to do what they have promised and usually do it well
- are self-confident with their peers, and respond and relate well to parents, teachers and other adults
- seem comfortable when asked to show their work to the class
- seem to be well-liked by their classmates
- are co-operative with teachers and classmates — tend to avoid bickering and are generally easy to get along with
- can express themselves well — have a good verbal facility and are usually well-understood
- adapt readily to new situations — are flexible in thought and action and do not seem disturbed when the normal routine is changed
- seem to enjoy being around other people — are sociable and prefer not to be alone
- generally direct the activity in which they are involved
- participate in most social activities connected with the school and can be counted on to be there
- excel in athletic activities — are well-co-ordinated and enjoy all sorts of athletic games
- are able to pick up and interpret non-verbal cues, and can draw inferences that other students have to have spelled out for them.

CHARACTERISTICS AND BEHAVIOURS OF YOUNG STUDENTS WHO ARE GIFTED AND TALENTED[17]

Young gifted children exhibit some unique learning and behavioural tendencies which, if observed and understood, can lead to early identification and appropriate scholastic accommodations. Being familiar with the following early indicators of giftedness ensures young children who are gifted are not misunderstood or overlooked in special instruction or programming options.

Characteristics	Description of Behaviour
Curiosity	These students ask provocative questions at an early age, listen intently to the answers and often respond with subsequent questions; they take less for granted, seeking the "how" and "why."
Ability to learn quickly from mistakes	They form strategies to deal with relevant mistakes and then apply these to new situations.
Ability to transfer knowledge	They apply knowledge in constructing new relationships by making new connections.
Depth and/or breadth of interests	They develop an interest in something and want to know all about it. They make exceptional efforts to pursue their interests.
Advanced preference in books and films	They may learn to read earlier than others and with a better comprehension of the nuances of language. They will often read widely, quickly and intensely, and have a large vocabulary. They may be drawn to books, films and television programs recommended for children three-to-five years older.
Boredom when forced into redundant work and learning	This occurs after mastering a task, when they are not interested and experience lack of challenge.
Decrease in quality on a series of repetitive tasks	A disinterest in repetitive work may be made obvious by a decrease in input to tasks.
Creative mischief	This is not the same as deliberate misbehaviour. They may not break the rules precisely, but manipulate them to suit their intentions.
Friends	Young students who are gifted may gravitate toward older students to whom they feel they can better relate.
Games	They insist on rigid rules or invent a change of rules when playing games.

CONCERNS RELATED TO THE CHARACTERISTIC STRENGTHS ASSOCIATED WITH GIFTEDNESS

Problems that may be associated with characteristic strengths of students who are gifted are:

- acquiring and retaining information quickly may result in impatience with the slowness of others
- critical thinking abilities may lead to critical or intolerant views of others
- love of truth, equity and fair play may result in difficulty being practical, and worry about humanitarian concerns
- combinations of characteristics may lead to difficulties with peer relations, perfectionism, avoidance of risk taking and excessive self-criticism (Webb, 1993).

Difficulties these students may experience could be categorized as follows:

- **environmental**: e.g., if the school program lacks challenge, boredom, resentment or disengagement may occur
- **interpersonal**: e.g., students who are gifted may be perceived as different by peers or teachers which may cause these students to mask their high potentials
- **intrapersonal**: e.g., problems can arise related to self-concept, self-esteem and self-acceptance (Allan & Fox, 1979).

Schools should not lose the moral dimension of giftedness through identification procedures that focus solely on performance of special talents in specific domains (Silverman, 1994). If teachers place too much value on performance — with competitions, media attention, external recognition and rewards — they may be inadvertently teaching students they are valued only for what they do. Many students who are gifted and talented are not as concerned with outward achievement and recognition as is characteristic of the self-consciousness and egocentrism of early adolescence. Rather, these students often follow a type of growth oriented more toward introspection and emotional awareness, as illustrated in the example on the following page.

> *Some gifted children show enormous empathy with others, surpassing at times the compassion of adults who are more limited by society's expectations. As a result, adults may not understand a child's reaction. For example, during a chess tournament, John, the obvious winner, began to make careless mistakes and lost the game. When asked what happened, he replied, "I noticed my opponent had tears in his eyes. I could not concentrate and lost my desire to win." John's empathy was greater than his ambition. Many adults, especially those who supported John, were disappointed. Yet, one could argue that his reaction was a more mature one than theirs for his self-esteem did not depend on winning the competition.*
>
> (AnneMarie Roeper, 1982, p. 24, cited in Piechowski, 1991, p. 290)

ASYNCHRONY

Giftedness is asynchronous development in which advanced cognitive abilities and heightened intensity combine to create inner experiences and awareness that are qualitatively different from the norm. This asynchrony increases with higher intellectual capacity. The uniqueness of the gifted renders them particularly vulnerable and requires modifications in parenting, teaching and counselling in order for them to develop optimally.

The Columbus Group, 1991

Asynchrony is uneven development in the rates of intellectual, emotional and physical development. It is important that teachers recognize asynchrony as a characteristic of giftedness. Asynchrony means that:

- students who are gifted are more complex and intense than their peers
- students who are gifted may feel out-of-sync with age peers and age-appropriate curriculum
- the greater the degree to which intellectual development outstrips physical development, the more out-of-sync the student feels internally, in social relations and in relation to the school curriculum (Silverman, 1994).

These differences make students who are gifted extremely vulnerable. Their greatest need is each other in an environment in which it is safe to be different.

These students may appear to be different ages in different situations. The internal tension that is created is often demonstrated in external adjustment difficulties.

Intellectual and personality traits of students who are gifted and talented can become disadvantages when those differences are not valued. The greater the asynchrony, the emotional sensitivity and the emotional intensity of a high-potential learner, the greater the vulnerability of the student within an insensitive environment. Identification, assessment and programming procedures must attend to special educational and counselling needs as well as academic provisions for students who are gifted and talented.

> *As an integral part of their education, we must sensitize gifted children and youth to the major problems our world societies face — among them, poverty, famine, war and nuclear annihilation . . . depletion of resources, environmental pollution, cultural conflict, unemployment, and quality of life. We must sensitize gifted and talented children and youth to be concerned about these problems not because they are going to resolve them as students, but because we want them to care enough to devote themselves to developing their specialized gifts and talents to contributing to the resolution of the problems which beset our world.*
>
> Passow, 1988,
> p. 13

DIFFICULTIES IN RECOGNIZING CERTAIN STUDENTS WHO ARE GIFTED IN THE CLASSROOM

Unfortunately, some students who are gifted, who indicate potential through a number of characteristics, may not demonstrate these at school. For a variety of reasons, they may have disengaged from school and from learning. Clearly, the potential these students possess is difficult for teachers to recognize.

Some aspects of the typical characteristics of students who are gifted may, in fact, detract from their interest in learning and result in failure to achieve their potential.

Students who are gifted may be categorized into six profiles, four of which are characterized by traits which are not likely to alert teachers in the first instance, to their high potential. These four are Types 2, 3, 4 and 5. The six profiles are:[18]

Type 1 — The successful gifted student: These students learn well and score highly on both intelligence and achievement tests. They are eager for approval from significant others, conforming, dependent and perfectionist and rarely exhibit any behavioural difficulties at school. As many as 90 per cent of students who are identified for gifted programs belong to this type.

Type 2 — The challenging/divergently gifted student: These students are highly creative. They may, however, appear to be obstinate, tactless or sarcastic. They do not conform to the school system. Their interactions at school and at home, such as correcting adults, questioning rules, poor self-control and standing up for their own convictions, often involve conflict.

Type 3 — The underground gifted student: These students deny their talents in order to be accepted by others. They are often girls in late primary and early secondary school wanting to be accepted by their peers. They resist challenges, are insecure, frustrated and often have low self-esteem.

Type 4 — The dropout gifted student: These students are angry with adults, society and themselves because, over a number of years, they feel the system has not met their needs. They have low self-esteem, feel rejected and are often bitter and resentful. They can be disruptive and abusive or withdrawn. They do not complete school tasks, do inconsistent work and seem to be of only average or lower ability.

Type 5 — The double-labelled gifted student: These students, as well as possessing high potential, are also either learning disabled or have emotional difficulties. They usually produce substandard or incomplete work because they may be anxious about failure. They often display disruptive behaviours and are viewed as only average performers. They feel stressed, discouraged, frustrated or helpless.

Type 6 — The autonomous gifted student: These students are independent and self-directed. They accept themselves and are high risk takers. They feel in charge of their lives, and express their feelings, needs and goals freely and appropriately. They have positive self-images, are successful and use the school system effectively to create new opportunities for themselves.

These profiles of the gifted were first developed in 1988 by George Betts and Maureen Neihart.

GUIDANCE AND COUNSELLING SUPPORT

As well as coping with social and emotional issues similar to those faced by all students during their development, students who are gifted and talented often face additional concerns. Some of these are related to the characteristics associated with their giftedness, while others are related to the reactions of the range of significant people in their environment.[19]

The following list outlines areas of particular difficulty for students who are gifted who may be as young as 11 years of age, especially girls:[20]

- identity diffusion — continuing concerns about abilities and talents
- alienation — worries about being considered different from peers
- role conflict and concerns about societal expectations of roles associated with gender
- perfectionism
- premature identity — closing off self-identity development due to impatience with lack of clarity of who they are
- the separation process — difficulties understanding differences of family members and severing attachments
- problems appreciating the years of practice needed to develop skills fully and the need for perseverance
- problems with emotional over-control
- fear of failure.

Schools can support students who are gifted in dealing with these concerns in a variety of ways. Guidance, counselling and support may be provided on an informal or regular basis to students individually or in groups, by professional counsellors or by caring staff.[21]

Coping Strategies[22]

Students who are gifted may benefit from being taught the following coping strategies:

- separating facts from feelings
- changing the way they perceive and think about events
- refining time management and work organization skills
- learning cognitive behavioural self-talk strategies
- learning reflective questioning strategies
- building a system of social supports
- accentuating their positives
- becoming involved in assertive communication skill training
- developing social skills
- focusing on problem solving
- learning relaxation and tension-reduction strategies.

Career guidance is critical for students who are gifted. Students who are gifted are often confused by their own multi-potentiality, that is, the wide range of study and career options available to them. Students who are gifted need to be exposed to a broad range of experiences so they have the opportunity to develop areas that may not have been developed as initial interests. They also need guidance in order to choose wisely from a genuinely comprehensive array of career options.

GATHERING AND RECORDING MANY KINDS OF DATA

As informal recognition of students who are gifted and talented can be problematic, a flexible and ongoing approach to formal identification procedures is recommended. For reliable and systematic identification, a range of different measures is required. A system using both quantitative and qualitative measures will potentially increase the number of students identified and served.[23]

Clearly the key purpose in identifying students who are gifted and talented is to provide the educational programming best suited to their individual needs. Each jurisdiction may choose a combination of the most appropriate and practicable measures of identification to suit their values, beliefs and circumstances.[23]

Typically, several kinds of data are included in identification procedures. These data fall into four broad categories: tests, ratings or referrals, products and accomplishments, and classroom performance data. Student profiles and student portfolios, which contain informal, performance-based assessment information, also are critical in identifying, documenting and evaluating students' significant strengths, talents and interests.

The following broad range of processes of identification are recommended.

TESTS

The superiority of students on the dimensions which determine giftedness and talent can be demonstrated through one or more tests that are valid assessments. Students must be able to demonstrate, in one way or another, that they really have the abilities or achievements which indicate giftedness or talent. Simply claiming giftedness is not enough.[24]

Standardized Tests

- *highlight student strengths*
- *focus attention on objectives*
- *can measure some domains of knowledge accurately*
- *are cost effective*
- *are efficient*

Renzulli, 1994
p. 107

If the assessment instruments used meet the criteria of reliability, validity, objectivity and audience appropriateness, they can provide teachers with useful information. In the past, many schools were content to use standardized intelligence tests, scores on achievement tests and marks in school as bases for identifying students as intellectually gifted. As the focus of testing has shifted more and more toward an emphasis on performance-based and product-based assessment, the validity of traditional measures has come into question; e.g., Gardner, 1983, Renzulli, 1986.[24] It is important to remember that all sources of information are valuable if they improve teachers' understanding of students' potential for future performance and provide direction for enhancing future performance.

Individual Intelligence Tests

Individual intelligence tests, such as those in the Weschler and the Stanford-Binet series, provide a profile of problem-solving abilities in both verbal and performance spheres. They also provide the opportunity for skilled observation, by a qualified psychologist, of students in a controlled situation with exposure to stimulating materials.[25]

Standardized intelligence tests can be useful in the identification procedure. IQ (intelligence quotient) tests are significant tools for recognizing the special education needs of intellectually gifted students. IQ tests can identify students who are exceptionally gifted and have unique educational and socio-emotional needs (Gross, 1993). They can also identify students who do not fit the stereotypic trinity of high verbal ability, high achievement and high motivation — those students who are underachievers, have low verbal ability, have handicaps, such as learning disabilities, behavioural disorders, hearing impairments, visual impairments and physical impairments (Kaufman & Harrison, 1986).

Although IQ tests are useful for making decisions for participation in gifted programming, they are less useful for determining the most appropriate educational experiences (Pyryt, 1996).

Intelligence tests are useful identification procedures for several reasons. These tests yield approximately equal numbers of boys and girls who are gifted in early childhood (Silverman, 1986), whereas all measures of achievement discriminate increasingly against females from junior high through adulthood (Sadker & Sadker, 1994). Children from diverse ethnic backgrounds stand a better chance of being discovered through IQ tests than through achievement-based measures, since achievement is more a function of environment than ability. The IQ, as a ratio of mental age to chronological age, can provide valuable information about asynchrony, or the discrepant rates of intellectual, emotional and physical development which creates inner tension in students who are gifted and talented (Silverman, 1994).

Although individual intelligence tests are still considered by many to provide the best single indicator of giftedness, and have been in use and continually refined over many decades, an identification procedure reliant on such a measure as the sole indicator is likely to exclude certain students who are gifted. Individual intelligence tests favour convergent students who are gifted, can be insensitive to disadvantages in the learning backgrounds of certain students and do not probe such characteristics as emotional giftedness, goal directedness, specific talents, creativity, breadth of interests, independence in work skills and intellectual curiosity.[26]

The categories outlined below may be used as an orientation for developing individualized programs for students who are gifted and talented.

Categories of giftedness based on IQ[27]

115–129 IQ	Mildly gifted	(+1–2 SD)
130–144 IQ	Moderately gifted	(+2–3 SD)
145–159 IQ	Highly gifted	(+3–4 SD)
160+ IQ	Extraordinarily gifted	(> +4 SD)

Group Intelligence Tests[28]

Group intelligence tests may be used in schools as a standardized measure to identify gifted students. Tests include the Canadian Cognitive Abilities Test (CCAT, 1990), the Otis-Lennon School Ability Test (1989) and Ravens Progressive Matrices (1989).

Group intelligence tests are often restricted to testing one type of ability, such as visual-spatial skills or language comprehension. Several tend to test the level of achievement rather than the potential for learning and reasoning capacities. In addition, these pencil and paper tests may discriminate against slow writers, students of non-English-speaking background, poor readers, and poorly motivated and underachieving students. For these reasons, it is estimated that group intelligence tests fail to identify more than 50 per cent of students who are gifted.

Achievement Testing in Academic Aptitudes[29]

Specific aptitude tests are designed to test achievement levels in school-based tasks, such as mathematics, language areas and reading, and science. Some of these tests purely assess mastery of designated subskills learned; others are more effective at probing understanding and ability to reason in the area.

Out-of-Level Testing

For the identification of students who are gifted, it is recommended that continued assessment on specific aptitudes or achievement, using the tests of higher grade levels, be administered in order to gauge precise levels of skills and knowledge, and a more accurate estimate of student potential.[30] One example is a test where a student in Grade 3 could demonstrate a reading and comprehension level of Grade 12+.

Teacher-made Tests

Teacher-made tests are usually designed to assess the degree of mastery of a specific unit that has been taught and evaluate competence in particular coursework. Objective teacher-made tests; e.g., multiple choice, matching and short answer, provide information about knowledge acquisition, the mastery of basic skills and in some cases, problem-solving strategies. Although this information is useful for determining general levels of proficiency, the most valuable kind of teacher-made assessments are those that elicit open-ended or extended responses. Responses of this type enable teachers to gain insight into complex student abilities, such as constructing convincing arguments, using expressive written or oral language, generating relevant hypotheses, applying creative solutions to complex problems and demonstrating deep levels of understanding.[31]

Teacher-made and Authentic Assessments
- *maximize and highlight student strengths*
- *do not rely on arbitrary time constraints*
- *may involve an actual audience*
- *are not always evaluated on a single score*
- *are representative of the challenges that exist within a discipline*
- *minimize comparisons among students*

Renzulli, 1994
p. 107

In using the diagnostic approach, test data may be useful in the following ways.[32]

- Test results can help teachers compare student achievement levels with appropriate norms.
- Criterion-referenced test data can inform teachers about students' actual grasp or mastery of a well-specified knowledge base (or the objectives within a certain content domain).
- Test data provide information about students' general knowledge, memory, various reasoning abilities, and how quickly and well students perform under specific testing conditions. These data help teachers plan how best to conduct instruction and what specific content may be most appropriate for the student at a particular time and setting.
- Test data help teachers recognize significant strengths of students whose classroom performance suffers for various reasons — those potentials which may otherwise go unnoticed.

The value of test data rests in the information it provides, not simply in overall indexes or total scores to be used to qualify or disqualify students or establish their eligibility for a particular program.[32] Some examples of standardized tests which may be useful in the identification process are listed in Section 10, pages GT.291–308.

Section 3: Identification — Ratings or Referrals

Appendix 3

CLASS ASSESSMENT

Section 3: Identification — Ratings or Referrals

BRILLIANT BEHAVIOURS

Appendix 2

Student

Strength

Date

True?	Behaviour

GT.222

RATINGS OR REFERRALS

Information from several sources, in the form of checklists, rating scales, recommendations or referrals, can be valuable in identifying students' interests, special talents and unique characteristics. A teacher, parent or student may identify a significant strength that would have gone unnoticed. To be useful, rating scales, checklists or referral forms should ask specific questions that are directly related to understanding the student's strengths, learning preferences or styles, interests and activities, accomplishments and products.[33]

Two sample checklists are included as Appendices 2 and 3, pages GT.222–223.

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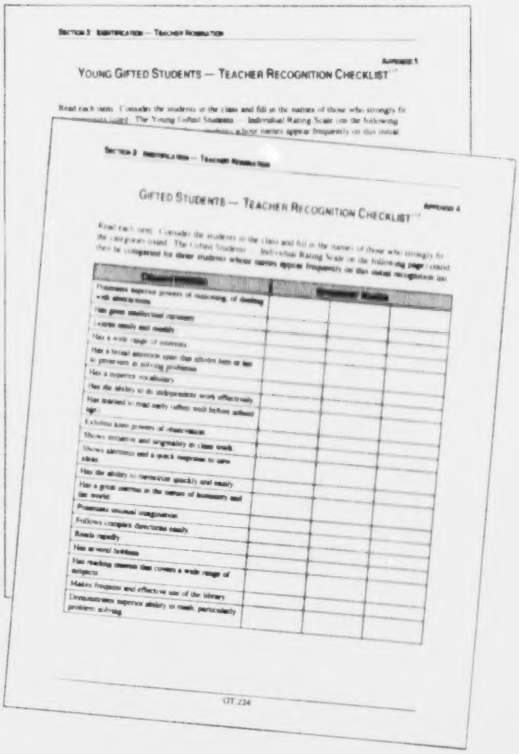


Section 3: Identification — Teacher Nomination

Appendix 5

YOUNG GIFTED STUDENTS — TEACHER RECOGNITION CHECKLIST

Section 3: Identification — Teacher Nomination

Appendix 4

GIFTED STUDENTS — TEACHER RECOGNITION CHECKLIST

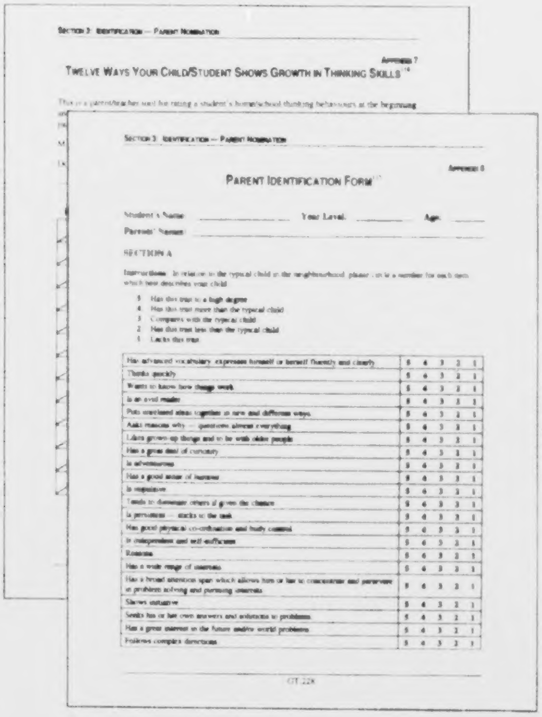
Read each item. Consider the students in the class and fill in the names of those who strongly fit the categories listed. The Gifted Students — Individual Rating Scale on the following page could then be completed for those students whose names appear frequently on this initial recognition list.

Possesses superior powers of reasoning, of dealing with abstractions			
Has great intellectual curiosity			
Learns easily and readily			
Has a wide range of interests			
Has a broad attention span that allows him or her to persevere in solving problems			
Has a superior vocabulary			
Has the ability to do independent work effectively			
Has learned to read early (often well before school age)			
Exhibits keen powers of observation			
Shows initiative and originality in class work			
Shows alertness and a quick response to new ideas			
Has the ability to memorize quickly and easily			
Has a great interest in the nature of humanity and the world			
Possesses unusual imagination			
Follows complex directions easily			
Reads rapidly			
Has several hobbies			
Has reading interests that covers a wide range of subjects			
Makes frequent and effective use of the library			
Demonstrates superior ability in math, particularly problem solving			

GT.224

Teacher Nomination[34]

Teacher nomination checklists have been found to be particularly useful in helping teachers observe students in structured and systematic ways. These checklists assist teachers in making informed judgements about the potential of students beyond assumptions on the sole basis of achievement scores or behaviours in class, which may be misleading. See Appendices 4–5, pages GT.224–227 for more on recognizing giftedness.



Section 3: Identification — Parent Nomination

Appendix 7

TWELVE WAYS YOUR CHILD/STUDENT SHOWS GROWTH IN THINKING SKILLS

Section 3: Identification — Parent Nomination

Appendix 6

PARENT IDENTIFICATION FORM

Student's Name: ________ Year Level: ______ Age: ____

Parents' Names: ________

SECTION A

Instructions: In relation to the typical child in the neighbourhood, please circle a number for each item which best describes your child.

5 Has this trait to a high degree
4 Has this trait more than the typical child
3 Compares with the typical child
2 Has this trait less than the typical child
1 Lacks this trait

Has advanced vocabulary, expresses himself or herself fluently and clearly	5	4	3	2	1
Thinks quickly	5	4	3	2	1
Wants to know how things work	5	4	3	2	1
Is an avid reader	5	4	3	2	1
Puts unrelated ideas together in new and different ways	5	4	3	2	1
Asks reasons why — questions almost everything	5	4	3	2	1
Likes grown-up things and to be with older people	5	4	3	2	1
Has a great deal of curiosity	5	4	3	2	1
Is adventurous	5	4	3	2	1
Has a good sense of humour	5	4	3	2	1
Is impulsive	5	4	3	2	1
Tends to dominate others if given the chance	5	4	3	2	1
Is persistent — sticks to the task	5	4	3	2	1
Has good physical co-ordination and body control	5	4	3	2	1
Is independent and self-sufficient	5	4	3	2	1
Reasons	5	4	3	2	1
Has a wide range of interests	5	4	3	2	1
Has a broad attention span which allows him or her to concentrate and persevere in problem solving and pursuing interests	5	4	3	2	1
Shows initiative	5	4	3	2	1
Seeks his or her own answers and solutions to problems	5	4	3	2	1
Has a great interest in the future and/or world problems	5	4	3	2	1
Follows complex directions	5	4	3	2	1

GT.228

Parent Nomination[35]

Researchers highly recommend that parent questionnaires, designed to obtain relevant home background, personal student history, parental perceptions of children and early learning experiences be included as important components of identification procedures used in schools. See Appendices 6–7, pages GT.228–231 for more on parent identification.

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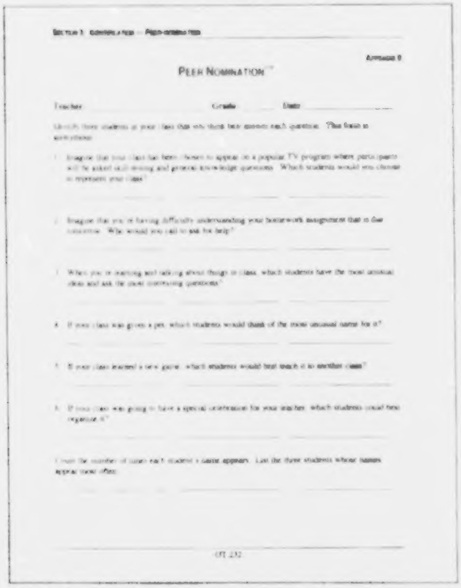

PEER NOMINATION

Teacher Grade Date

GT.232

Peer Nomination

Research indicates that peer group nominations of students who are gifted can be quite accurate and have a reasonable correlation with standardized intelligence tests.[36] Students should not see this as an evaluation, but rather as a way of recognizing one another's strengths and differences. See Appendix 8, page GT.232 for a peer nomination form which could be used with junior, intermediate and senior level students.

Self-nomination[37]

Self-nomination measures can complement observations and ratings made by significant others. They may provide insights into a student's self-perceptions, self-esteem, attitudes and values, which may be consistent with accepted characteristics of students who are gifted and talented.

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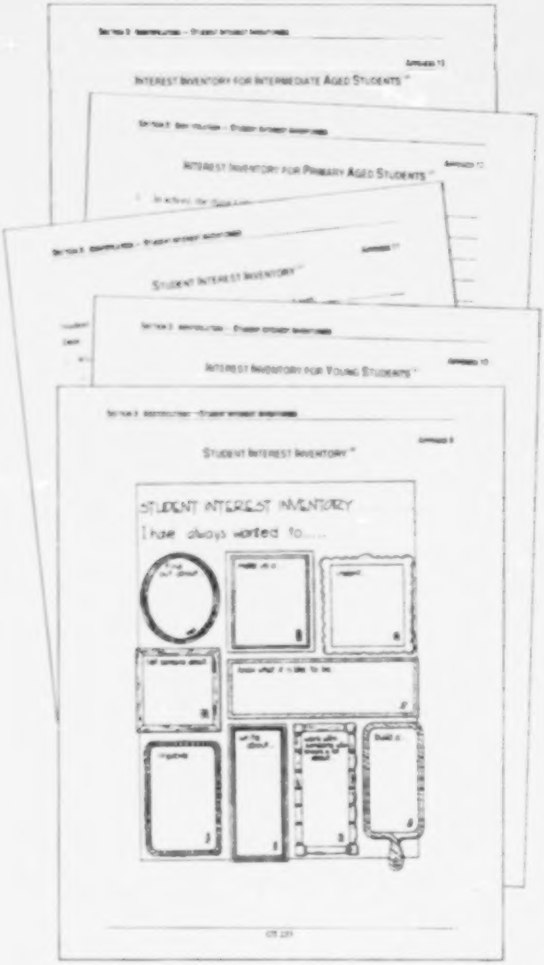

INTEREST INVENTORY FOR INTERMEDIATE AGED STUDENTS

INTEREST INVENTORY FOR PRIMARY AGED STUDENTS

STUDENT INTEREST INVENTORY

INTEREST INVENTORY FOR YOUNG STUDENTS

STUDENT INTEREST INVENTORY

STUDENT INTEREST INVENTORY

I have always wanted to.....

Student Interest Inventories[38]

Student interest inventories are self-report measures which, when carefully designed, may provide detailed information about a student's talents and interests. An example of a comprehensive interest inventory has been produced by Renzulli (1977). This inventory covers such aspects as asking students to rank choices regarding careers, book titles, favourite experts to invite into the classroom, places they would like to spend a weekend, the favoured possessions they would take on a trip to space and the things they would like to collect if they had the time and money. A specific reading interest inventory may also yield useful information. See Appendices 9–13, pages GT.233–238, for other examples of student interest inventories.

Individual Interviews[39]

Finally, conducting personal interviews with students may reveal information that none of the more formal measures may tap. Clearly, appropriate rapport needs to be established for certain students to feel comfortable about disclosing information about their hobbies, interests, extra-curricular achievements and particularly, their thoughts and wishes. Carefully phrased questions may provide important insights into the gifts, talents and passion areas of high-potential students.

PRODUCTS AND ACCOMPLISHMENTS

Identification data may include consideration of student products or work samples. Products could include such things as portfolios of writing, photographs of student projects, journals and taped samples of oral language which reflect a broad and varied sampling of activities. These products can reflect students' task commitment, creativity and ability levels, expressed directly through their actions rather than through a formal assessment or test.[40]

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It is important to include information selected by students and parents as well as teachers. Teachers may also gather valuable insights into students' potentials and talents, through the feedback from various authentic audiences who have viewed student products.

The products expected from students who are gifted should resemble the products developed by professionals in the discipline being studied (Renzulli, 1977). These professional products will differ from typical student products in the following ways.[41]

- Result from real problems — The products developed by students who are gifted should address problems that are real to them. Students can be encouraged to choose a specific area of concern within a certain field of study and design an investigation around that area.
- Addressed to real audiences — To the extent possible, the products developed by students who are gifted should be addressed to real audiences, such as the scientific community, city council or a government agency. At other times, the real audience consists of classmates or other students in the school. Students who are gifted should not be developing products that are seen or heard only by the teacher.
- Transformation — Products of students who are gifted should represent transformations of existing information or data rather than mere summaries of others' conclusions. Original research, original artwork and other such products should include the collection and analysis of raw data. If students use higher levels of thinking, they must produce a product that is a true transformation.
- Variety — Students who are gifted should be encouraged to learn about and use a variety of types of products and consider carefully what is the most appropriate representation of their content to the proposed audience. Variety in products allows students with different intellectual and creative strengths to demonstrate their competence with appropriate media. They also need practice using varied product options to meet the same goal.
- Self-selected format — Students who are gifted must be allowed to decide which formats to use in presenting their solutions to problems real to them. Student interests, strengths and prior experiences all may influence these choices. Certainly teachers can provide assistance in the selection of a format and may encourage students, at times, to try a format new to them, however students should be allowed to make the final choices.

- Appropriate evaluation — Often, student products are directed toward and evaluated by the teacher only. The products of professionals are evaluated by the audiences for whom they were intended. Products of students who are gifted should be evaluated by appropriate audiences, including audiences of peers. Students also should be encouraged or required to complete an extensive self-evaluation of their own products.

The following suggestions offer a variety of forms and modalities in which products may be presented.[42]

Product Form/Modality	Suggestions for Product Presentation
Oral	cassette; chant; choral reading or drama; debate, dialogue or discussion; intercom message; interview; lecture, speech or teaching lesson; monologue; oral imitations; panel discussion; reader's theatre or storytelling; report; song; survey
Visual	advertisement; artifacts; blueprint; book jacket; bulletin board; cartoon; charts or diagrams; poster, collage, mindmap or web; computer graphics; display; filmstrip or slides; folding chart; graffiti; mini-gallery; mural; overhead; painting; photographs; program; project cube; rebus; record cover; rubbings; scroll; spread sheet; story board; tableau; tables; time capsule or timeline; transparency; visual journal or wordless book
Written	acrostic; advertisement or slogans; autobiography, biography or bibliography; book review; brochure or pamphlet; case study; celebrity cards; code; computer program; criticism or editorial; crossword puzzle; definitions; epitaphs; fact file; instructions; invitations; itinerary; journal/diary; letter; list; manual; menus; newspaper outline; palindromes; puns or tongue twisters; quotation collage; recipe; logbook or record book; report; requests; resume; schedule; script; song; story; summary; telegrams; textbook or worksheet; travelogue; want ads
Kinesthetic	collection, costume, creative movement, dance, demonstration or dramatization, diorama, experiment, flip-book, game, impersonation, mini-center, mobile, model, museum, pantomime, playmaking, prototype, puppetry, puzzle, scrapbook, sculpture, stitchery or weaving, terrarium, treasure hunt, vivarium

Students take more care in developing their products when they are intended for audiences beyond the classroom. Products for real audiences include:[43]

- letters to the editor and articles in the local newspaper
- student works published in children's literary magazines
- displays in public places — malls, banks, shop windows, parks
- presentations to appropriate local groups; e.g., city council, historical society, naturalist society
- artistic performances for the public or senior citizens
- story telling in a library or bookstore
- creation of oral history tapes for a library
- "invention" convention for other students
- mall display of outcomes from ecological studies
- contribution of math puzzles to children's magazines
- televised student panel discussion of a community problem
- student business plans reviewed by business community
- dramatization of an issue for the community.

CLASSROOM PERFORMANCE DATA

Classroom performance data include feedback from teachers, classroom test results, report card marks, anecdotal records, etc. This data can help teachers recognize specific accomplishments or achievements on a day-to-day basis among students in certain subject areas.[44]

There are two principles that teachers should consider when collecting anecdotal comments. First, observations should take place in authentic situations — those that are part of normal instruction. For example, a student's capacity to work co-operatively may be noted in working with a group on a task that requires collaboration.

Second, observations need to allow for making inferences about learning. The recording of anecdotal comments should be oriented toward interpretative questions, such as, "Why did the student do that?" or, "What general pattern of learning is exemplified?" Looking beyond the particular instance that was observed is important because it is the interpretation and explanation of patterns of learning that will establish the basis for evaluation and future instruction.

In gathering and using several kinds of data, teachers may want to include the development and use of student profiles and student portfolios — two important components in an inclusive, contemporary approach to identifying students' strengths, talents and interests.

> a child who has developed a spirited interest in dolphins, but who is also experiencing difficulties in reading and basic language skills, is far more likely to read background material and improve written and oral language skills when he or she is working on a research project based on this abiding interest in dolphins.
>
> Renzulli, 1994
> p. 100

Student Profiles

Student profiles may be used to create programs to meet students' unique learning needs. The main purposes of student profiles are to guide assessment of strengths, talents and sustained interests as input for effective instructional planning. A profile may be appropriate to develop for any student. However, it is essential to develop student profiles when teachers become aware that students are experiencing specific difficulties in their learning.[45]

A student profile is intended for several purposes, including:[45]

- identifying areas of sustained interest
- finding emerging strengths and talents
- understanding the conditions under which the student works or performs best
- relating past learning to future experiences and needs
- providing a planning foundation for active learning
- guiding instructional planning and decision making.

IPP — STUDENT PROFILE

IPP — STUDENT PROFILE

Name of Test	Date Given	Result

Students' profiles may contain: interest assessments, journals and learning logs, test data, psychoeducational testing data, anecdotal data, observations of student performance, prior grades and evaluations, learning styles data, personal characteristics data, biographical data, information from parents, observational data, and ratings and references. It may also contain data about transferable process skills, such as thinking, writing and computer skills, personal goals and self-identified challenges, and students' portfolios.[45] See Appendix 14, page GT.239 for a blank IPP — Student Profile. Also see pages GT.81 and GT.83 for samples of completed IPP — Student Profiles.

Five areas to consider are the student's:[46]

- academic achievement
- learning styles and strengths
- interests
- special abilities
- visions and goals for the future.

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- **Academic achievement** indicates what students can do in various areas of the curriculum. In addition to academic achievement, tests that have a ceiling many years beyond the students' age level can provide information about students' maximum levels of performance. This information is valuable when selecting learning activities, materials and environments that may provide a challenge.

MODALITIES: SOME APPLICATIONS

LEARNING STYLES: TEACHER OBSERVATION CHECKLIST

LEARNING CHANNELS INVENTORY

LEARNING PREFERENCES

MODALITY STRENGTH CHECKLIST

- **Learning styles and strengths** refers to the way students approach learning. The concept of learning styles is approached from various perspectives. See Appendices 15–19, pages GT.240–245 for checklists.

- **Interests** of students can provide a basis for curriculum development, extension exercises and independent studies. This data may be gathered through teacher observation and various published inventories.

- **Special abilities** refers to students' talents that may or may not be demonstrated through the school curriculum. Students may have special abilities in taking mechanical objects apart and putting them back together, or may be accomplished pianists, figure skaters or hockey players. Special abilities often can be identified through knowledge of students' hobbies, extracurricular activities and outside interests.

- **Vision and goals for the future** are students' personal values and hopes for the future. This includes students' desired lifestyles, possible careers and community interests set in the context of a long-term vision. Creating a vision or desired future provides students with focus for personal planning.

While student profiles are intended to serve primarily as diagnostic or planning aids, the main purposes of student portfolios have to do with record-keeping and documentation.[47]

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Student Portfolio

Portfolios are useful within the field of gifted education. They provide a logical way to trace talent development and to record modifications such as curriculum compacting. Compacting allows teachers to identify student strengths, document mastery of content, and replace learned material with challenging opportunities. Examples of enrichment activities, acceleration opportunities, and evidence of involvement with real-world problems and audiences can be included.

K. Kettle (ed.)
1994

A portfolio is a systematic collection of student work selected largely by students to provide information about their attitudes, motivation, level of development and growth over time.[48]

The student portfolio provides an effective framework for gathering and organizing data about student learning and accomplishment. The portfolio is created, and most often maintained and retained, by the person whose work is represented. It can be displayed, presented or even reproduced for others to incorporate as part of a profile or learning plan. Although the use of portfolios is common in the fine arts, it should be generalizable to other curriculum areas. A portfolio can be created in any area of creative productivity.[49]

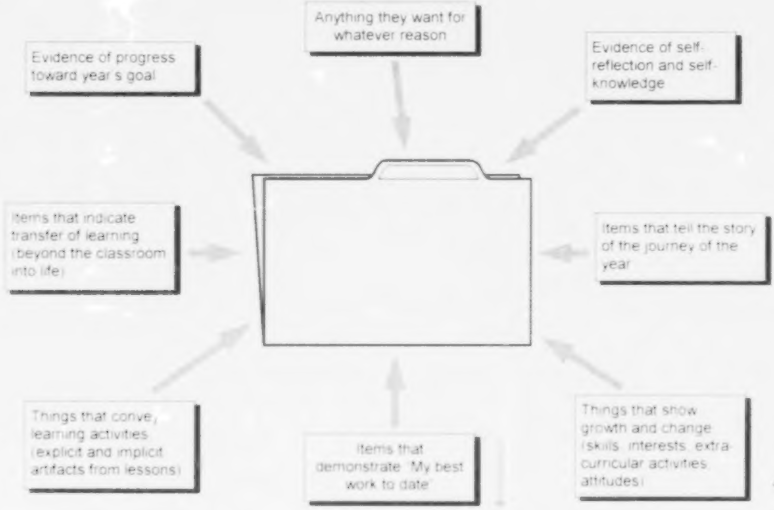
Some purposes for developing a portfolio include:[50]

- documenting one's own activities and accomplishments over an extended period of time
- charting one's course and growth
- monitoring and adjusting one's path and actions
- verifying efforts and outcomes
- communicating one's work with others
- expressing and celebrating one's creative accomplishments
- providing a foundation by which to assess growth and change, and set future goals.

Before using portfolios, teachers should consider the following planning issues:[51]

- What is the purpose of the portfolio?
- What items should be included?
- How will the items be selected and organized?
- How will the portfolios be stored?
- How will the portfolios be assessed?
- What formats will be used to allow students to share their portfolios?

What should be included to really show what students know? Ask students. Let them help decide.


Anything they want for whatever reason
Evidence of progress toward year's goal
Evidence of self-reflection and self-knowledge
Items that indicate transfer of learning (beyond the classroom into life)
Items that tell the story of the journey of the year
Things that convey learning activities (explicit and implicit artifacts from lessons)
Items that demonstrate "My best work to date"
Things that show growth and change (skills, interests, extra-curricular activities, attitudes)

[52]

Portfolios are largely managed by students to develop their organizational skills, and extend their responsibility and ownership in their work. Students are encouraged to produce their best work, value their own progress and select products for their portfolio which represent what they are learning.[53]

Each product placed in the portfolio has the student's name and the date on it, so growth over time can be determined. Each product also has a caption or brief note attached to explain, in the student's own words, why this product was selected. The products not selected for the portfolio are sent home so parents consistently have examples of the student's work.[53]

Students also produce items at home that show their interests and talents. Throughout the year, parents may encourage children to take a few examples of what they have done well at home to school, to include in their portfolios.[53]

Teachers use the portfolio process to teach students to critique their work and reflect on its merits. While students review their work to select products to go in their portfolios, teachers prompt students' analysis and decision-making skills by asking them to think about these questions.

- What really makes something your best work?
- What examples do you want to keep in your portfolio to represent what you are learning throughout the year?

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- How is this product different from other pieces of your work?
- How does the product show something important that you think or feel?
- How does this product show something important that you have learned?
- How does this product demonstrate the progress you've made in a specific topic or subject area?[53]

The student's portfolio may contain many kinds of items, such as product or work samples; testimonials; self-evaluations or evaluations by others; biographical or journal records; documentation of participation in events or special activities; honours, prizes, awards or other recognition; published reviews; photos, audio or videocassettes and scrapbooks.[54]

The Total Talent Portfolio

The 'theme' of the Total Talent Portfolio might best be summarized in the form of two questions

- *What are the very best things we know and can record about a student?*
- *What are the very best things we can do to capitalize on this information?*

Renzulli, 1994,
p. 105

The total talent portfolio (Renzulli, 1994) offers a way for teachers and other school personnel to provide opportunities, resources and encouragement that support escalated student involvement in both required and self-selected activities.

Rather than identifying high-potential students by a score on a test, teachers can identify and assess students' strengths by way of a total talent portfolio which looks at academic abilities, interests, motivational styles, ways of expression, learning environment and intellectual styles. By broadening the identification process, many students with great potential can be included in gifted programs.

The total talent portfolio focuses on specific learning characteristics that serve as a basis for talent development. The approach uses both traditional and performance-based assessment to determine three dimensions of the learner — abilities, interests and preferred learning styles (see chart on next page). Schools use portfolios to decide which talent development opportunities to offer a particular student through regular classes, enrichment clusters and special services.[55]

The easiest way to use the portfolio is to prepare a folder for each student. On the inside front cover of the folder, affix a copy of the chart. When strength areas of the student have been identified, the teacher circles those areas on the chart. Teachers then have a quick comprehensive picture of strengths that can be addressed in various learning experiences.[56]

The total talent portfolio does not replace the cumulative record folder held for each student.[57]

Abilities	Interests	Style Preferences			
Maximum Performance Indicators	Interest Areas	Instructional Styles Preferences	Learning Environment Preferences	Thinking Styles Preferences	Expression Style Preference
Tests • Standardized • Teacher-made Course grades Teacher ratings **Product Evaluation** • Written • Oral • Visual • Musical • Constructed Level of participation in learning activities Degree of interaction with others	Fine arts Crafts Literary Historical Mathematical/logical Physical sciences Life sciences Political/judicial Athletic/recreation Marketing/business Drama/dance Musical performance Musical composition Managerial/business Photography Film/video Computers Other (Specify)	Recitation and drill Peer tutoring Lecture Lecture/discussion Discussion Guided independent study* Learning/interest centre Simulation, role playing, dramatization, guided fantasy Learning games Replicative reports or projects* Investigative reports or projects* Unguided independent study* Internship* Apprenticeship* *with or without a mentor	**Inter/Intra Personal** • Self-oriented • Peer-oriented • Adult-oriented • Combined **Physical** • Sound • Heat • Light • Design • Mobility • Time of day • Food intake • Seating	Analytic (school smart) Synthetic/creative (creative, inventive) Practical/contextual (street smart) Legislative Executive Judicial	Written Oral Manipulative Discussion Display Dramatization Artistic Graphic Commercial Service
Ref: General tests and measurements literature	Ref: Renzulli, 1977b	Ref: Renzulli & Smith, 1979	Ref: Amabile, 1983; Dunn & Dunn, 1978; Gardner, 1983	Ref: Sternberg, 1984, 1988	Ref: Renzulli & Reis, 1985

The total talent portfolio and other talent profiles extend and focus the traditional emphasis on multiple-criteria in the identification process (Treffinger & Feldhusen, 1996). These talent portfolio/profiles are dynamic, task-specific and inclusive of many contextual factors rather than just a composite index based on several test scores or rating scales.

Positive learning experiences are provided in students' areas of talent strength, such as art, drama, music, industrial arts, technology, invention, home economics, photography, social or behavioural sciences, humanities or philosophy, math and science, foreign languages or athletics. The assumption is that students can develop a better sense of self-efficacy when they have opportunities for appropriate and challenging instruction within the domains of their talent strengths.

The total talent portfolio provides one method of gathering and recording information about students' abilities, interests and style preferences which enables teachers and other school personnel to make informed decisions in identification procedures.

DEVELOPING INDIVIDUALIZED PROGRAM PLANS (IPPs)

The IPP is a written commitment of intent by an educational team. It is meant to ensure the provision of appropriate programming for students with special needs and to act as a working document. It also provides a record of student progress. Modifications in programming to meet the educational needs of students should be reflected and documented in each student's individualized program plan.

Preparation of the IPP provides the opportunity for parents, teachers, school-based administrators and others involved with the student to address the learning needs of the student. The school administrator has the responsibility of ensuring that the IPP is prepared and maintained.

The IPP is a mandatory requirement of Alberta Learning for each student identified as having special needs and should include the items presented in the following checklist.

Included ✓	Essential Information
____	• assessed level of educational performance
____	• strengths and areas of need
____	• long-term goals and short-term objectives
____	• assessment procedures for short-term objectives
____	• special education and related services to be provided
____	• review dates, results and recommendations
____	• relevant medical information
____	• required classroom accommodations (any changes to instructional strategies, assessment procedures, materials, resources, facilities or equipment)
____	• transition plans

An IPP should describe what the student knows and can do, what and how the student should learn next, where the instruction will take place, who will provide it, how long it may take and what the student will do to demonstrate learning.

TRANSITION PLANNING

Transition planning is an integral part of the development of an IPP and should be undertaken collaboratively with the student, family, and any other services and agencies involved with the student. Transition planning should include the identification of any recommendations, strategies and resources which have proven to be effective, and any other special services a student who is gifted may require.

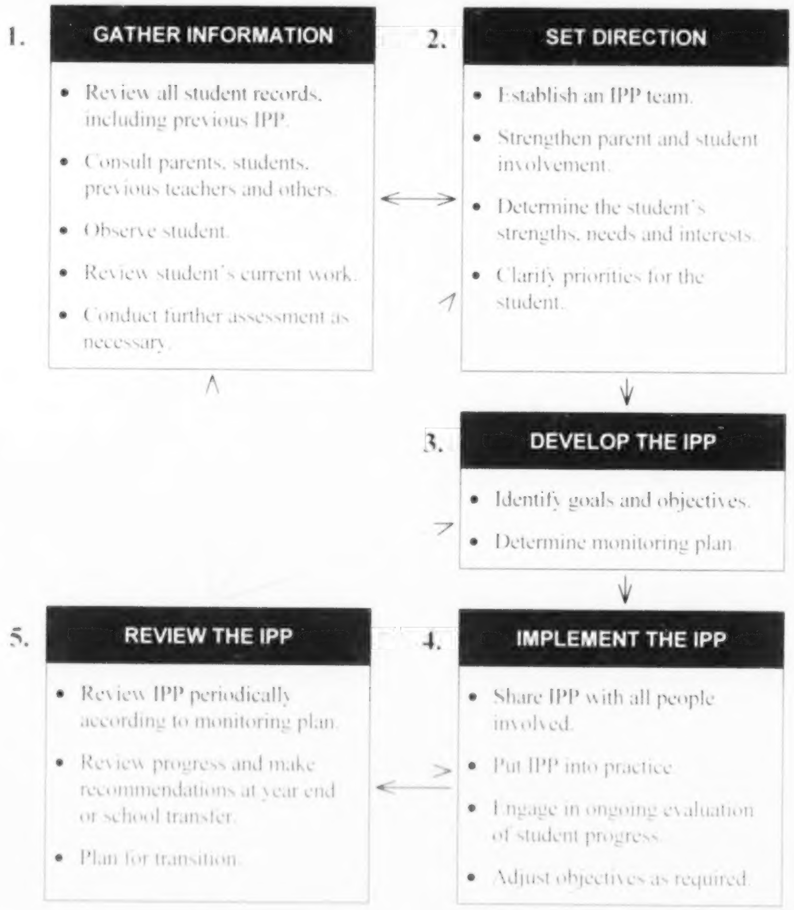
IPP PROCESS

The process for developing an individualized program plan is outlined in the following stages:

1. gather information
2. set direction
3. develop the IPP
4. implement the IPP
5. review the IPP.

Although the stages are given in sequence, teachers may vary the emphasis and order to meet individual needs. Several stages may be worked on simultaneously. It is important to emphasize that a team approach underlies the IPP process. As the graphic on the next page implies, the process is ongoing throughout the life of the IPP.

The following graphic represents an overview of the five stages in the IPP process. It may be used as a reference to ensure that the steps in developing, implementing and reviewing an IPP are addressed. Note the interaction among the stages indicated by arrows. The dotted arrows emanating from stage five indicate that during the review it may be advisable to refer back to the preceding stages in the IPP process.



1. **GATHER INFORMATION**
   - Review all student records, including previous IPP.
   - Consult parents, students, previous teachers and others.
   - Observe student.
   - Review student's current work.
   - Conduct further assessment as necessary.

2. **SET DIRECTION**
   - Establish an IPP team.
   - Strengthen parent and student involvement.
   - Determine the student's strengths, needs and interests.
   - Clarify priorities for the student.

3. **DEVELOP THE IPP**
   - Identify goals and objectives.
   - Determine monitoring plan.

4. **IMPLEMENT THE IPP**
   - Share IPP with all people involved.
   - Put IPP into practice.
   - Engage in ongoing evaluation of student progress.
   - Adjust objectives as required.

5. **REVIEW THE IPP**
   - Review IPP periodically according to monitoring plan.
   - Review progress and make recommendations at year end or school transfer.
   - Plan for transition.

For more information on developing IPPs, refer to *Individualized Program Plans*, Book 3 in the *Programming for Students with Special Needs* series.

The major focus of the IPP for students who are gifted and talented must be placed on strengths in higher levels of thinking, creativity and task commitment, and on providing opportunities for developing these strengths in relatively unstructured learning situations.

While there is no singular profile of a high-potential student, these students display at least some of the following characteristics or traits in varying degrees and combinations. These traits require distinctive educational responses as indicated in the following table.[58]

Traits of Students who are Gifted which Require Distinctive Educational Responses

Characteristic	Student's Educational Need
• ability to learn quickly, efficiently; rapid pace of information processing	• progress through content at individual pace or developmental rate
• ability to move quickly through the stages of intellectual development and at the same time be more advanced than chronological peers at each stage of development	• require less introduction and practice of skills and is able to spend more time on application, synthesis and evaluation of ideas
• unusual capacity for perceiving, processing and producing ideas and solutions to problems	• explore content and processes of learning at a level commensurate with abilities
• advanced ability to see abstractions, readily make connections to new contexts and work at varying levels of complexity	• explore ideas in greater depth and breadth
• advanced ability to use regulatory or metacognitive processes to guide thinking	• initiate, plan and direct personal learning, and engage in independent study
• capacity for perseverance, ability to sustain long periods of concentration and attention	• allow flexible scheduling for in-depth and long-term studies
• capacity for higher-level thinking; demonstrate eclectic interests; enthusiasm, fascination and intense involvement in a particular problem, area of study or form of human expression	• pursue topics and problems which pique interest, and expose student to a wide spectrum of ideas and issues
• sophisticated facility for expression	• communicate in various forms to various audiences
• advanced ability to analyze, evaluate and hypothesize ideas; apply	• higher-level thinking skills
• propensity for inventive, versatile thought	• reconceptualize existing knowledge and create new knowledge in an area of study

GENERAL CONSIDERATIONS

Students who are gifted and talented are capable of mastering the regular curriculum at a much faster pace and higher level of proficiency than students in the general school population. It is important to provide some alternative means that will allow students with varying ability levels to cover basic material at different rates and in ways that are compatible with a variety of learning styles.

Students who are gifted and talented should be provided with opportunities to identify and pursue advanced topics and areas of study that hold particular fascination for them. An IPP should include procedures for allowing students who are gifted numerous opportunities to:

- explore a wider variety of potential interests
- identify general areas of special interest
- focus or frame problems within these areas
- pursue these self-selected problems in a manner of a first-hand inquirer rather than a passive lesson learner.

It is important that the following fundamental principles be considered in effective IPP preparation.[59]

A comprehensive assessment incorporating high-ceiling measures of specialized abilities, self-concept, motivation, values, career interests and preferred educational environments is needed for individualized educational planning.

Pyryt, 1996, p. 257

- Allow adequate time for thoughtful planning and training in instructional design.
- Involve a co-operative planning model utilizing input from many different sources.
- Use accurate assessment data that is relevant to the instructional decisions made.
- Provide for the utilization of many different instructional activities.
- Encourage student participation.
- Consider each of these basic components of an effective instructional program for the gifted and talented: individualized basics, appropriate enrichment, effective acceleration, independence and self-direction, values and personal development.
- Remember, the IPP is concerned with methods of finding and solving problems, making inquiries and doing research, as well as with curriculum content.
- Be as concerned with the unknown as with the known and with the future as with the past or present.
- Ensure record keeping is explicit and objective, and involves the student directly in the process.

- Monitor systematically on a frequent schedule. Students who are gifted may meet the objectives before the identified review date.
- Provide a basis for effective co-ordination of learning resources at school, at home and in the community.
- Provide a foundation for effective co-ordination of regular educational programming and special educational services.
- Remember, an individualized program does not mean the student learns only in isolation.

COMMUNICATING WITH PARENTS OF A CHILD WHO IS GIFTED

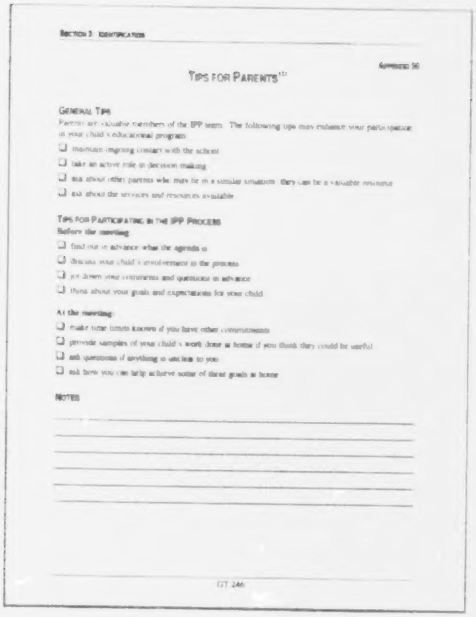
Parents play a critical role in facilitating their children's continued affective and intellectual growth. If they are to make responsible decisions concerning their children who are gifted, parents need to be well-informed and involved appropriately in their children's programs.

A partnership paradigm enables parents and the school or system-based resource personnel to work collaboratively on behalf of exceptional children. A primary goal of this approach is the development of co-operation and trust. Friendly, open communication with parents forms the basis of a desired mutual support system for children who are gifted.

Experience suggests that interactions with parents will be as varied as the range of concerns which may prompt an interview. By anticipating what parents of children who are gifted may need to know, teachers can look forward to a rewarding exchange of information.

A parent need-to-know list might include the following.

- How do the school's philosophy, goals and objectives encompass programming for the gifted — conception of giftedness, identification procedures, range of interventions?
- What are the characteristics of the gifted?
- What are the educational, social and emotional benefits of children who are gifted being with other children similar in nature?
- What are the psychological needs of the gifted and how can parents guide their children in handling peer criticism, intense emotional responses to the events, issues and ills in society?
- How parents can be involved in programming for their children who are gifted: e.g., IPP development, mentors, homework monitors. See the next page for suggestions for parent involvement in the IPP process. Also see Appendix 20, page GT.246, for a Tips for Parents sheet to help parents prepare for the IPP meeting.



Section 3: Identification

Appendix 20

TIPS FOR PARENTS

GENERAL TIPS

Parents are valuable members of the IPP team. The following tips may enhance your participation in your child's educational program.

☐ maintain ongoing contact with the school
☐ take an active role in decision making
☐ ask about other parents who may be in a similar situation; they can be a valuable resource
☐ ask about the services and resources available

TIPS FOR PARTICIPATING IN THE IPP PROCESS

Before the meeting

☐ find out in advance what the agenda is
☐ discuss your child's involvement in the process
☐ jot down your comments and questions in advance
☐ think about your goals and expectations for your child

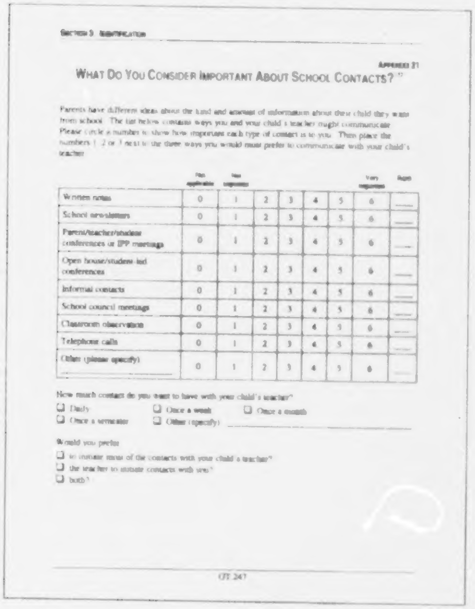
At the meeting

☐ make time limits known if you have other commitments
☐ provide samples of your child's work done at home if you think they could be useful
☐ ask questions if anything is unclear to you
☐ ask how you can help achieve some of these goals at home

NOTES

GT.246

In addition to the formal parent-teacher interview, communication may be facilitated through newsletters, parent information seminars and electronic resources. See page GT.78 for questions to help parents communicate effectively with the school. Also see Appendix 21, page GT.247, for a sample communication form which may be used to help clarify the method and frequency of home-school contacts.



Section 3: Identification

Appendix 21

WHAT DO YOU CONSIDER IMPORTANT ABOUT SCHOOL CONTACTS?

Parents have different ideas about the kind and amount of information about their child they want from school. The list below contains ways you and your child's teacher might communicate. Please circle a number to show how important each type of contact is to you. Then place the numbers 1, 2 or 3 next to the three ways you would most prefer to communicate with your child's teacher.

	Not applicable	Not important					Very important	Rank
Written notes	0	1	2	3	4	5	6	___
School newsletters	0	1	2	3	4	5	6	___
Parent/teacher/student conferences or IPP meetings	0	1	2	3	4	5	6	___
Open house/student-led conferences	0	1	2	3	4	5	6	___
Informal contacts	0	1	2	3	4	5	6	___
School council meetings	0	1	2	3	4	5	6	___
Classroom observation	0	1	2	3	4	5	6	___
Telephone calls	0	1	2	3	4	5	6	___
Other (please specify) ________	0	1	2	3	4	5	6	___

How much contact do you want to have with your child's teacher?

☐ Daily ☐ Once a week ☐ Once a month
☐ Once a semester ☐ Other (specify) ________

Would you prefer

☐ to initiate most of the contacts with your child's teacher?
☐ the teacher to initiate contacts with you?
☐ both?

GT.247

PARENT TEACHER CONFERENCES

Parent-teacher or student-led conferences are opportunities to share expectations and applaud progress. These conferences also provide opportunities for parents to become actively involved in their children's programs. Preparation ensures effective communication. It is helpful if parents come to the conference informed. Before conferences, parents should review children's work and report cards. They should think about the learning styles, study habits, special interests and skills, medical problems and recent experiences that

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could affect behaviour in school.[60] The tips sheet on the following page includes suggestions to help parents prepare for parent-teacher conferences. It may be helpful to send this sheet home.

PARENT INVOLVEMENT IN THE IPP PROCESS

Parents provide unique perspectives about their children's personalities, development and learning. Open communication and co-operation between home and school increase opportunities for students with special needs to experience success. Parents should be included as active members of IPP teams as early in the process as possible. Teachers should encourage parents to:

- ask questions if they need clarification about the purpose of the IPP or the process to be followed in its development
- specify how and to what degree, they wish to become involved in the development of their children's IPPs
- contact the school if they have questions about upcoming IPP meetings; e.g., agendas, who will be attending, or if there are specific persons that they would like to attend
- write down any questions
- ask for clarification of anything that seems unclear at meetings
- ask for copies of the goals and objectives of draft IPPs so that they can familiarize themselves before meetings
- think of their children's strengths and areas of need, and write down any goals or expectations that they would like to see included in IPPs
- inform the school of any general health and medical concerns that they have for their children
- provide reports and other information about their children that they feel are important
- inform the school of any professionals and agencies providing service to their children
- ask for clarification of any IPP goals or objectives that are unclear — it is important that all IPP team members have a common understanding of the goals and objectives
- ask how they may reinforce any IPP goals at home
- discuss their children's involvement in the development of IPPs
- contact the school if they have concerns about IPPs. They can request reviews of IPPs if they believe changes are necessary.

Tips for a Better Meet-the-Teacher Conference[61]

- Get to know your child's teachers early in the school year, alerting them to problems or concerns and sharing information that might help them understand your child better.
- Plan for conferences. Talk to your child; review report cards. Glance over school work. Think about learning styles and study habits.
- Ask if the child can attend parent-teacher conferences; inquire about student-led conferences.
- Ask questions about what's expected of your child: how the class is structured, what a typical day is like and what tests will be taken or scheduled.

- Ask questions about how your child works: is the work easy or hard; how are relationships with teachers and students; is there a subject in which he or she is less motivated; what are the child's special interests or strengths?
- Decide with the teacher what needs to be done to help your child. Set goals, with timelines, for what the teacher, you and the child will do. Agree on plans and on special assistance before you leave.
- Talk with your child afterward and discuss what was decided.
- Follow up. Implement your end of any agreement. Keep in touch with the teacher. If the plan isn't working or new problems develop, call the teacher and ask for another meeting.
- Ask for other help if you aren't getting results. If the teacher isn't helpful or progress isn't being made, talk with a supervisor. Call the principal's office to see who you should talk to next.

QUESTIONS TO HELP PARENTS COMMUNICATE EFFECTIVELY WITH THE SCHOOL

1 How does the school ensure that basic skills and concepts are learned?

2 How does the school provide learning activities that are at an appropriate level and pace for each student?

3 How does the school provide experience in creative thinking and problem solving?

4 How does the school develop logical thinking abilities?

5 How does the school stimulate students to use their imaginations?

6 How does the school develop students' self-awareness, and acceptance of capabilities, interests and needs?

7 How does the school encourage students to set realistic goals?

8 How does the school develop independence, self-direction and discipline in learning?

9 How does the school provide guidance in relating intellectually, artistically and socially with others?

10 How does the school provide access to information about a variety of topics above and beyond the curriculum?

11 How does the school provide access to a wide range of reading materials?

INVOLVING PARENTS AS VOLUNTEERS[62]

Parents of children who are gifted can be involved as volunteers for various projects connected with the program. There are many ways to involve parents as volunteers in a gifted program. The volunteer program should be flexible, allowing parents with diverse skills and interests to contribute as their time and schedules allow. Some ways in which parents can be involved as volunteers follow.

- Organize or participate in local parent support groups for the gifted.
- Attend conferences on gifted education and share ideas about programming learned from such conferences.
- Become a spokesperson for the gifted program by making presentations at school board meetings, service clubs and parent groups.
- Assist the teacher in the classroom during activities requiring a low student-adult ratio.
- Become involved in a mentor program with one or more students who share a common interest.
- Develop instructional materials. This may range from laminating and duplicating, to designing instructional games or developing independent study units in an area in which a parent has expertise.
- Organize a library of materials about children who are gifted and gifted education. Often this can be done co-operatively with a school or public library.
- Accompany a class or smaller groups of students on field trips or assist in planning off-campus experiences.
- Participate in fund-raising for the program. In the course of raising money for special equipment or field trips, parents raise the program's visibility in the community.
- Edit or write for a newsletter or journal on students who are gifted.

COMPLETED IPP SAMPLES

The following IPP — Student Profiles, IPP — Student Plans and accompanying IPP samples describe the learning needs of two students who are gifted. The sample IPP for the junior high student includes one sample long-term goal which has been broken down into short-term objectives to illustrate the process. See Appendix 22, page GT.248 for a blank IPP — Student Plan.

Essential information to be included in an IPP has been defined on page GT.69. Formats may vary from jurisdiction to jurisdiction and among schools. Staff should refer to the guidelines in their respective jurisdictions to create a format that best meets their needs while incorporating the essential elements.

Case Studies Used in Developing Sample IPPs

Mathilde Maison is a bright six-year-old girl integrated into a Grade 1 classroom. She is extremely sensitive, and bursting with curiosity and ideas. She is verbal but dislikes writing. She has advanced academic skills but is immature socially. Since she acquires skills and concepts quickly, she is easily frustrated with errors made by herself and others. Mathilde will be encouraged to acquire skills in diplomacy and tolerance for frustration, while at the same time encouraged to feel a sense of challenge with hard work (not more work).

Jordan Jones, recently identified in the moderately gifted range, is a Grade 8 student in a large junior high school. Jordan displays a consistently positive attitude toward academic pursuits and his marks qualify him for the honour roll each term. Strengths in mathematics are well beyond grade level. He sets high standards for himself and, given the choice, he would prefer to work by himself — avoiding the risk of having classmates jeopardize his perfectionistic tendencies. Jordan enjoys reading, music, opportunities to engage in creative verbal activities and golf. Goals for Jordan include compacting of the regular math curriculum to allow for enrichment and acceleration. He will also be encouraged to participate in competitive debate.

IPP — STUDENT PROFILE[63]

Name: Mathilde Maison Teacher: Mrs. F. Suratess

Date: Sept 20/98 Grade/Class: 1 School: Meadowbrook

Learning Styles/Strengths:

Arithmetic operations (incl. ÷)
Vocabulary
Verbal reasoning
Abstract thinking
Sense of humour

Results from Achievement Tests

Name of Test	Date Given	Result
Diagnostic Reading Pgm.	Sept /98	Independ. Lev. - Gr 2 Instructional Lev - mid Gr. 3 Frustration Lev - Gr. 4
Gates McGinitie	Oct /98	Vocabulary - 97%ile Comprehension - 95%ile
Key Math	Oct /98	Overall Gr. equiv - 2.8

Student Interests:

Reading
Science

Results from Formal Testing

Name of Test	Date Given	Result
WISC-III	Nov /98	See student record file

Special Abilities:

Strong imagination
Enthusiasm for learning

Teacher Observations:

- Mathilde's writing and her talk are relatively devoid of detail.
- Mathilde is reluctant to engage in open-ended assignments . . . needs direction and structure.

Parent Observations:

- Mathilde designs clothes for her Barbie doll.
- Mathilde requires lots of encouragement to complete a task.

Summary of Needs:

- challenge in all academic areas
- assistance in coping with frustration and anger
- opportunities to play a leadership role in co-operative learning groups
- skills to address impulsive behaviour
- encouragement in taking intellectual, emotional risks.

Student's vision, goals for self:

- to develop confidence, self-assurance
- to add more elaboration (detail) in verbal communication and visual detail in artwork.

*Append samples of student work

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IPP — STUDENT PLAN[64]

Name: Mathilde Maison Teacher: Mrs. F. Suratess

Date: Sept 22/98 Grade/Class: 1 School: Meadowbrook

Based on the student profile, check the planning options below that will be part of the student's individualized program plan.

Appropriate Learning Levels

- ☐ Acceleration
- ☐ Telescoping
- ☑ Compacting

Curriculum Differentiation

- ☑ Content
- ☑ Processes
- ☑ Products

Enrichment Opportunities

- ☑ Exploration activities
- ☑ Thinking, research and planning skills
- ☐ Individual study option

Other

- ☐ Special programs
- ☑ Mentoring
- ☐ Apprenticeship

What are the intended student outcomes?

- continued motivation for learning
- an enlarged repertoire of higher order thinking skills, information retrieval skills and organizational skills.
- growth in confidence to take intellectual risks.

How will the outcomes be assessed?

- teacher observation
- assessment of skill application (as evidenced in individual and small group activities, quizzes, independent projects (oral and written))
- self assessment
- peer assessment

Criteria for evaluation of outcomes (set with student).

- achievement test scores
- demonstrated application of skills in day-to-day assignments
- evidence of quality samples in student portfolio

Members of planning team: Mrs. Suratess; Mr. Brown, Resource Teacher; Mathilde Maison; Mr. and Mrs. Maison, Parents

Review Date: Nov. 22/98

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IPP — STUDENT PROFILE[65]

Name: Jordan Jones
Teacher: Mr. Morrow (homeroom)
Date: Oct. 26/99
Grade/Class: 8
School: Hopewell Junior High

Learning Styles/Strengths:
Prefers discussion, simulations
Strong vocabulary
Verbal/non-verbal reasoning

Results from Achievement Tests

Name of Test	Date Given	Result
AB Acht. Tests (Gr. 6)	06/97	Exceptional Range

Student Interests:
Reading
Golf
Chess
Plays clarinet

Results from Formal Testing

Name of Test	Date Given	Result
WISC-III	06/03/98	F.S. 140
Renzulli/Smith Learning Styles Inventory	09/03/98	See file

Special Abilities:
Creative thinker (fluent, original).
Exceptional math strengths.

Teacher Observations:

Parent Observations:

Summary of Needs:
Co-operative learning strategies.
Counselling to address perfectionistic trait.

Student's vision, goals for self:

- To achieve Grade 12 matriculation as quickly as possible.
- To improve skills in individual sports (golf, snowboarding).
- To participate in formal debate competition.

*Append samples of student work

IPP — STUDENT PLAN⁶⁶

Name: Jordan Jones Teacher: Mr. Morrow (homeroom)

Date: Oct. 26/99 Grade/Class: 8 School: Hopewell Junior High

Based on the student profile, check the planning options below that will be part of the student's individualized program plan.

Appropriate Learning Levels
- ☒ Acceleration
- ☐ Telescoping
- ☒ Compacting

Curriculum Differentiation
- ☒ Content
- ☒ Processes
- ☒ Products

Enrichment Opportunities
- ☐ Exploration activities
- ☒ Thinking, research and planning skills
- ☒ Individual study option

Other
- ☒ Special programs
- ☐ Mentoring
- ☐ Apprenticeship

What are the intended student outcomes?
- demonstrated performance in mathematical skills and concepts beyond the Grade 8 prescriptive curriculum.
- an enlarged battery of social skills implemented in small group and team activities.
- confidence in the development of cogent arguments as reflected in debating presentations.

How will the outcomes be assessed?
- tests (standardized, teacher designed).
- teacher observation/debate coach observation.
- self-concept inventory.

Criteria for evaluation of outcomes (set with student).
- test scores
- evidence of successful group participation/teacher observation.
- application of higher-level thinking skills; e.g., synthesis, evaluation, in day-to-day assignments.

Members of planning team: Mr. Morrow (homeroom),
Mrs. Billings (counsellor), other subject teachers,
Mr. and Mrs. Jones, Jordan Jones.

Review Date: January 4, 2000

SAMPLE

MATHILDE MAISON

INDIVIDUALIZED PROGRAM PLAN

STUDENT: Mathilde
BIRTH DATE: June 30, 19xx
TEACHER RESPONSIBLE FOR OVERALL PROGRAM: Mrs. F. Suratess

STUDENT I.D.#: 56946572
PARENT/GUARDIAN: Mr. and Mrs. Maison
REVIEW DATES: November/March/June

DATE: September 25, 19xx
TELEPHONE:
LEARNING GROUP/GRADE: Integrated Grade 1 class

SPECIAL EDUCATION AND RELATED SERVICES
(Additional School Staff/Support Personnel/Agencies)
Language Arts — Mrs. Graylock, Consultant — Mr. Knoughetal, Psychologist — Dr. G. Sodur

SCHOOL HISTORY
Elementary at Meadowbrook

RELEVANT MEDICAL INFORMATION
asthma; allergy to eggs and peanuts

AREAS OF STRENGTH (Talents, Skills, Interests)
- enthusiastic about learning
- learns quickly and is interested in everything
- good vocabulary, strong memory
- good sense of humour
- strong imagination, fluency of ideas and a fund of general knowledge
- exhibits advanced reading comprehension and vocabulary through her articulate speech
- work demonstrates good understanding of basic mathematical skills
- displays interest in and an understanding of science and the scientific method

AREAS OF NEED
- has difficulty dealing with errors when she makes them
- seeks attention and control of situations
- needs to be challenged in all academic areas
- needs to develop self-direction
- needs to reconcile her emotional intensity with her intellectual development
- working co-operatively
- coping skills when angry and frustrated
- reduction of impulsive behavioural reactions

ASSESSED LEVEL OF EDUCATIONAL PERFORMANCE

Diagnostic Reading Program (DRP) (September 199x) — Independent Level: end Grade 2; Instructional Level: mid-Grade 3; Frustration Level: early Grade 4

Gates Mcginitie (October 199x) — Vocabulary: 97 percentile; Comprehension: 95 percentile

Key Math (October 199x) — Overall grade equivalent: 2.8. Mathilde showed advanced skills in the areas of basic facts (including division). Her math concepts are also advanced. Mathilde showed average abilities in geometry and money.

Wechsler Intelligence Scale for Children-III (WISC-III) (November 199x) — See student record file for report. Strengths were numerous, especially vocabulary, verbal reasoning and abstract thinking. Her processing speed and copying skills were at the upper end of the average range.

Teacher Observation (ongoing) — Mathilde is functioning at above grade level in all academic areas. Mathilde reads chapter novels of a second and third grade level, with clear factual comprehension. Her written work is average for a Grade 1 student. She is an articulate speaker with a vocabulary similar to that of a nine-year-old. She shows signs of impulsivity in her thinking skills and interactions. Mathilde has a keen interest in science and demonstrates a superior knowledge of general facts. Social studies inquiry skills are advanced while her verbal explanations are at grade level. Fine and gross motor skills are age appropriate (November 199x).

STUDENT INVOLVEMENT
- parent/student/teacher interview in September to develop IPP goals
- will provide feedback with respect to enjoyment of academic tasks
- will have opportunities to work with a variety of peers in various settings

PARENT INVOLVEMENT
- involved in development of IPP
- parent/student/teacher interview held in September
- will use questions rather than making suggestions in helping Mathilde with her school work
- will use thinking guides provided by the teacher when reading and talking about stories
- will monitor Mathilde's social-emotional development as the year progresses

REQUIRED CLASSROOM ACCOMMODATIONS (changes to instructional and evaluation strategies, materials and resources, facilities or equipment)
- Mathilde needs to hear the reason for rules
- encourage her to take risks
- encourage elaboration, especially with the written process
- get her to talk about her feelings and others' points of view
- consider her sensitivity when providing direction
- ensure concrete manipulatives are available for project work beyond the Grade 1 level

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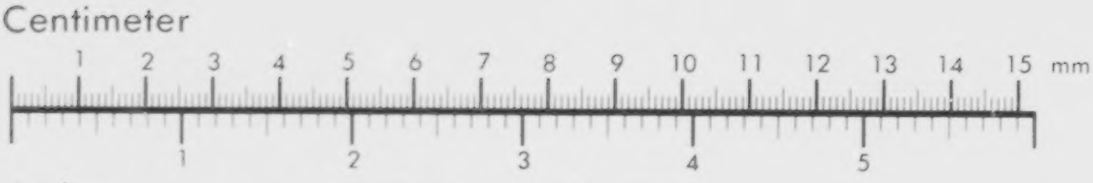
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LONG-TERM GOAL: Mathilde will incorporate more descriptive detail in her writing.

Short-term Objectives Related to Long-term Goal (Observable/Measurable)	Review Dates:	Assessment Procedures:	Results and Recommendations:
1. By November, Mathilde will demonstrate use of colourful, appropriately used, action verbs.	November 30	– teacher aide observation – student completed checklists	– achieved
2. By January, Mathilde will draw on a variety of sensory channels to more clearly describe people, places, events.	January 30	– teacher aide observation	– achieved
3. By June, Mathilde will produce a minimum of three examples of creative writing.	June 30	– teacher aide observation – student portfolio	– achieved . . . continue to encourage elaboration in writing assignments

LONG-TERM GOAL: Mathilde will demonstrate her abilities as an independent learner of science.

Short-term Objectives Related to Long-term Goal (Observable/Measurable)	Review Dates:	Assessment Procedures:	Results and Recommendations:
1. By October 1, upon request, Mathilde will be able to state and orally define the six components of a scientific experiment on eight of 10 requests.	October 1	– teacher observation	– achieved
2. By November 30, when presented with a brief outline of two simple experiments, Mathilde will be able to explain how each experiment could be conducted, by verbally identifying all six components for at least one of the experiments.	November 30	– teacher observation	– achieved
3. By January 15, given a series of three simple experiments, Mathilde will be able to conduct at least two of the three experiments demonstrating the six component parts.	January 15	– teacher observation – observation of product	– achieved; she had some difficulty with the apparatus set up
4. By March 1, when presented with a series of five problems related to life science, Mathilde will be able to locate information in the library, using various media and design a project using the six parts of a scientific experiment, for at least three of the problems.	March 1	– teacher observation – librarian assistance	– emerging; Mathilde enjoys the video medium
5. By May 15, using the experiments developed in the March 1 objective, Mathilde will be able to successfully conduct two of the five experiments, demonstrating the six parts of an experiment.	May 15	– teacher observation – observation of product	– achieved

* Please note: An additional long-term goal: Mathilde will practise appropriate strategies for dealing with impulsivity.

Transition Plans (recommendations, services required, strategies and materials that were effective)

- Continue to provide opportunities for Mathilde to assume responsibility for planning and carrying out her plan toward the completion of a learning activity
- Games which reinforce mathematical concepts intrigue Mathilde: e.g., Monopoly, Stock Ticker, What's in the Square?
- Introduce Mathilde and others of similar ability to "Junior Great Books."

Signature of IPP Team Members (Signature indicates that you understand the IPP)

Parent/guardian ______________________

Student (if applicable) ______________________

Principal or designate ______________________

Teacher(s) ______________________

____

____

Other team members ______________________

____

____

____

____

Sample
Individualized Program Plan for **Jordan Jones** 199x –199x

SCHOOL IDENTIFICATION INFORMATION

SCHOOL SYSTEM NAME Happy Valley #19
ADDRESS 327 Yellow Stick Road
PHONE NUMBER (664) 302-0011

SCHOOL NAME Hopewell Junior High
ADDRESS 45 Hill Street
PHONE NUMBER 704-6888

STUDENT IDENTIFICATION INFORMATION

NAME Jordan Jones
PROGRAM TITLE
DATE OF BIRTH 07-10-84 GRADE 8 SEX [✓ M] F
LANGUAGE English HOME Eng. SCHOOL Eng. Fr.
PARENTS/GUARDIAN NAME(S) Robert and Mary Jones
ADDRESS 16 Silver Street, Cando, Alberta
PHONE NUMBER 704-3210 (WORK) 704-8992 (HOME)

PROGRAM AND RELATED SERVICES

DESCRIPTION OF SPECIAL EDUCATION PROGRAM DESCRIPTION OF REGULAR PROGRAM

INSTRUCTIONAL AREA	PERIODS/WEEK	SUBJECT	TEACHER	ACCOMMODATIONS REQUIRED*	MEDICAL CONCERNS DATE & FINDINGS
Works with Resource Teacher	1 hour / week	Language Arts 88	EJM	[ ] YES [X] NO	• hayfever (pollen)
		Mathematics 90	XYZ	[ ] YES [X] NO	• corrected vision (must wear glasses)
		Social Studies 80	SSR	[ ] YES [X] NO	
		Science 86	EEM	[ ] YES [X] NO	
		Phys. Ed. 90	DHS	[ ] YES [X] NO	
ANCILLARY SERVICES		Music 84	AAR	[ ] YES [X] NO	
Counselling ✓	Speech	French 85	MBL	[ ] YES [X] NO	
Soc. Ser.	Nurse	Health 92	DHS	[ ] YES [X] NO	
Psychology	O.T.				
Other	P.T.	Transition Plan: [ ] YES [ ] NO		* If "YES" see attached	

Sample (cont'd)
Individualized Program Plan for **Jordan Jones** 199x –199x Page 2 of 5

ASSESSMENT RESULTS

FORMAL

INSTRUMENT	DATE	RESULTS	IDENTIFIED STRENGTHS/NEEDS
WISC-III	March 6, 1998	V–143	Strong vocabulary
		P–139	Verbal reasoning
		FS–140±5	Non-verbal reasoning
Alberta Achievement Tests - Gr. 6	June 1997	Exceptional range	Needs assistance in working co-operatively with other students

INFORMAL

Myers-Briggs	February 20, 1998	I.N.F.P.	Creativity
			Prefers choices within guidelines
			Needs counselling to deal with perfectionist tendencies and self-criticism.

OBSERVATIONS

Consistently on honour roll	In the Grades 7 and 8 years		
Thin social network	In the Grades 6, 7, 8 years		Needs to take himself less seriously
Voracious reader	In the Grades 1 to 8 years		

SUMMARY

Jordan is a highly capable student who would benefit from academic challenge through enrichment and or acceleration. He needs individual and small group counselling to assist in developing social skills.

Sample (cont'd)

Individualized Program Plan for Jordan Jones 199x –199x Page 3 of 5

ANNUAL SUMMARY REPORT

ANNUAL GOALS

To participate in challenging learning activities which enrich and or accelerate the mandated curriculum.
To further develop critical logical thinking skills.
To enlarge repertoire of social, interpersonal strategies.
To decrease disabling perfectionistic tendencies.

SUMMARY OF GAINS MADE, EFFECTIVE METHODOLOGIES AND MATERIALS, AREAS OF CONTINUING CONCERN

To be completed at the time of review.

Sample (cont'd)

Individualized Program Plan for Jordan Jones 199x –199x Page 4 of 5

TRANSITION PLAN FOR Jordan Jones **DATE** ____________________

FUTURE YEAR ONE (199x–199x) — SPECIFIC GOALS (include services required)

PROGRAM MUST INCLUDE

- Differentiated learning activities with –
  - – CONTENT emphasizing key concepts and principles
  - – PROCESS strategies that emphasize higher order thinking skills
  - – PRODUCTS which reflect a synthesis of information as well as varied modes of expression, materials and technologies
- Individual and small group counselling to develop social skills

PROGRAM MAY INCLUDE

Participation in an academic talent search in the area of mathematics

PARENTS/STUDENT WOULD LIKE TO VISIT SITE [ ] Yes [ ] No Arranged for ____________________ On ____________________

FUTURE YEAR TWO/THREE — GLOBAL GOALS

- To engage in career counselling opportunities as a prelude to post-secondary education
- To seek work experience in an area of personal interest

SIGNATURES ____________________ Parent ____________________ Student ____________________ School

(GT91)

Sample (cont'd)

Individualized Program Plan for Jordan Jones 199x –199x Page 5 of 5

Goals

Annual Goal To participate in challenging learning activities which enrich and or accelerate the mandated curriculum.

Description of Present Level of Performance Consistent high performance in all subject areas as demonstrated in daily assignments, tests, projects.

SHORT-TERM OBJECTIVES (include criteria)	DATES			CHANGES RESULTING FROM REVIEW	EVALUATION METHOD/PERSON
	SD*	PAD*	AAD*		
Through the compacting process, complete	Sept 15	Nov 15	Feb 15		Challenge tests/XYZ
the Grade 8 math program by the end of the					
second reporting period.					
Engage in formal debate activities to hone	Feb 1	Mar 1	Mar 15		Judged against debate criteria / Judges
logical thinking skills (comparing, finding					of debate.
assumptions, interpreting evidence, etc.)					
Design and present a science fair project to	Jan 15	Mar 15			Measure against science fair criteria /
extend and reinforce creative and critical					judges of competition.
thinking skills					

*S.D. = STARTDATE. P.A.D. = PROPOSED ACHIEVEMENT DATE (IS THE REVIEW DATE). A.A.D. = ACTUAL ACHIEVEMENT DATE

Please note: A student may have three or four long-term or annual goals. Each annual goal should have its own set of short-term objectives.

CHARACTERISTICS AND IDENTIFICATION PROCEDURES FOR UNDERSERVED POPULATIONS

Several populations have traditionally been underserved in programs for the gifted: for example, gifted females, gifted-learning disabled, as well as high-potential students with one or more of the following: behavioural problems, minority status, physical and/or sensory disabilities, or high-potential students who underachieve.

GIFTED FEMALES

(Fox, Benbow & Perkins, 1983; Butler-Por, 1993; Eccles, 1985; Hollinger & Flemming, 1988; Kerr, 1991; Kramer, 1991; Sadker & Sadker, 1994)

Gifted females are under-represented in many programs. Research indicates that despite early intellectual promise and extraordinary potential, a great portion of girls' gifts remain undeveloped. The reasons are multiple and complex.

Factors contributing to the under-representation of girls who are gifted in programs for the gifted include:

- a shift from the high aspirations and consistent high performance of elementary school years to a lesser involvement with achievement goals in adolescence
- a decline in self-confidence and an intense social awareness in the teen years often combine to prompt high-potential females to deny their gifts, abilities and accomplishments to ensure social acceptance
- a resistance to embracing new tasks or taking risks out of fear that imperfect performance will expose their fragile concept of their own high ability
- biases in classroom dynamics that favour boys over girls in accepting responses to questions posed (Sadker & Sadker, 1994)
- biases in how females are portrayed in instructional texts and visuals (Sadker & Sadker, 1994).

Interventions that support a more balanced representation of girls in gifted programs include:

- selecting instructional resources which reflect an unbiased view of female roles
- providing guidance in academic and career planning
- enhancing the self-confidence of girls who are gifted by reinforcing belief in their abilities and valuing their efforts.

GIFTED-LEARNING DISABLED (GLD)

Many factors contribute to the under-representation of the gifted-learning disabled segment in the gifted population. Definitions which can be broadly interpreted in a variety of ways prompt practitioners to develop programming which reflects their particular understanding of the concept. In some instances, this diversity may be confusing to the point where teachers and parents respond to generally held notions about either exceptionality rather than attending to the unique attributes of each. Sometimes, the symptoms of either exceptionality (giftedness, learning disability) may mask or overlap, making identification difficult. A typical gifted-learning disabled student having been assessed with a Weschler Intelligence Scale will have a profile where perceptual organizational scores are superior to those measuring attentional or sequencing abilities. Such discrepancies and any number of the following characteristics may prevent or hamper a GLD student from being accurately identified.

> *Disabilities depress these children's IQ and achievement scores disqualifying them for gifted programs. in addition high intelligence enables [some of] them to compensate well enough for their weaknesses to maintain grade level expectations which prevents them from being detected as learning-disabled or qualifying for special education services Catch 22!*
>
> Silverman 1989
> p 37

Characteristics of the Gifted-learning Disabled[6,7]

Characteristics of gifted-learning disabled students which hamper identification as gifted, include:

- frustration with inability to master certain academic skills
- uneven academic pattern with strengths in mathematics and weaknesses in language-arts areas
- written language difficulties
- require more time to process language and respond
- overwhelmed by input from multiple sources
- difficulty with tasks requiring multiple skills
- learned helplessness
- general lack of motivation
- disruptive classroom behaviour
- supersensitivity
- failure to complete assignments
- lack of organization skills
- demonstration of poor listening and concentration skills
- deficiency in tasks emphasizing memory and perceptual abilities
- unusual visual sensitivity to light
- unrealistic self-expectations
- low self-esteem
- absence of social skills with some peers
- hyperactivity.

The following are characteristics of the gifted which often mask learning disabilities (LD):[68]

- exceptional analytical abilities
- high levels of creativity
- advanced problem-solving skills
- ability to think of divergent ideas and solutions
- interest and ability in pursuing broad-based, thematic topics
- enjoyment of conversation on complex and challenging subjects
- wide variety of interests
- good memory
- specific artistic, musical or mechanical aptitude
- strong vocabulary skills
- strong mathematical skills
- spatial abilities
- task commitment
- high readiness to learn
- sophisticated sense of humour.

See Appendix 23, page GT.249 for the Crossover Profile, a composite of the crossover student which consists of both gifted and LD characteristics.

Identification Procedures

- Use multidisciplinary assessment tools; e.g., psychological assessment, achievement measures, social/emotional observations, behaviour analysis.
- Look for GLD among underachieving students.

GIFTED UNDERACHIEVERS

For underachievers who are gifted, a large discrepancy exists between school achievement and students' potential. Underachievement may range from mild (the student attains high marks by doing what is expected and no more) to severe (when the student may be failing grades or has not learned a basic skill, such as reading).

Characteristics of Underachievers

Characteristics include:

- low self-esteem
- lack of self-confidence
- sense of low personal control over one's own life

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- lack of clear relationship between effort and outcome
- blame shifted to others for lack of success in school
- perfectionism.

There is evidence to suggest that as high as 45 per cent of identified gifted children with IQ scores above 130 also have grade point averages that are lower than average

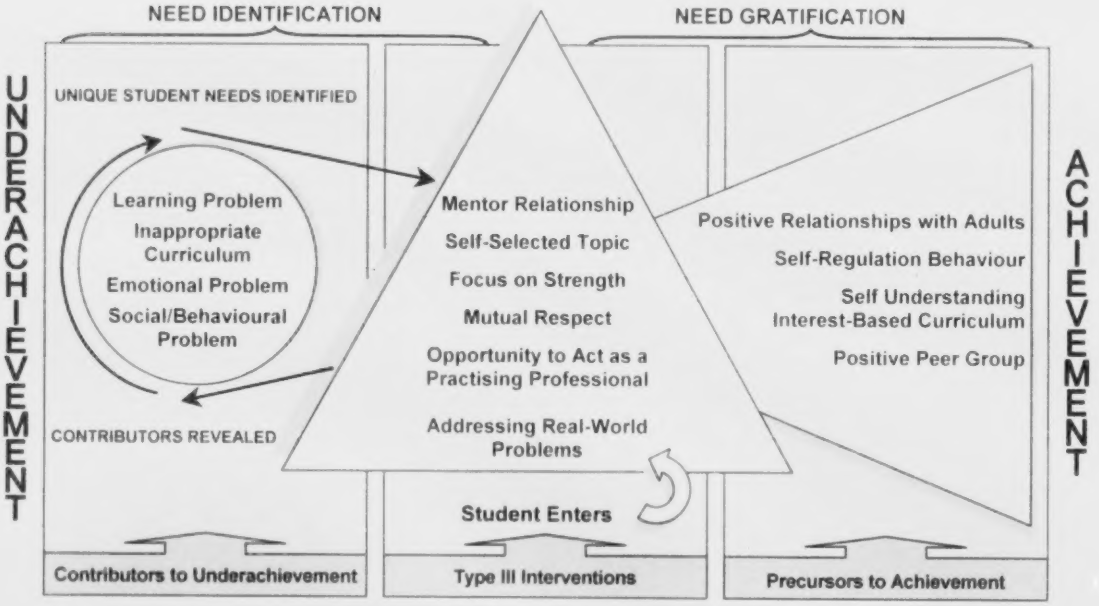
Johnson, 1981, in Reid & McGuire, 1995, p. 14

The foregoing attributes signal teachers to examine the factors which contribute to underachievement of high potential learners:

- emotional issues, including dysfunctional families, attention-seeking behaviour, perfectionism and depression
- inappropriate curriculum
- learning disabilities and/or poor self-regulation concerns, usually as primary or secondary contributors
- social and behavioural concerns, such as inappropriate peer group, behavioural problems (see behavioural problems on the next page), poor social skills (Baum, Renzulli & Hébert, 1995).

Reversal of underachievement is a complex multi-faceted process. It begins with identification and unfolds through a variety of interventions involving student, teachers and parents.

The diagram below illustrates the contributors to underachievement, some possible Type III (Individual/Small-Group Investigation of Real Problems) interventions and some precursors to achievement.[69] (See page GT.22 for information on Type III interventions.)


NEED IDENTIFICATION
NEED GRATIFICATION
UNDERACHIEVEMENT
UNIQUE STUDENT NEEDS IDENTIFIED
Learning Problem
Inappropriate Curriculum
Emotional Problem
Social/Behavioural Problem
CONTRIBUTORS REVEALED
Mentor Relationship
Self-Selected Topic
Focus on Strength
Mutual Respect
Opportunity to Act as a Practising Professional
Addressing Real-World Problems
Student Enters
Positive Relationships with Adults
Self-Regulation Behaviour
Self Understanding
Interest-Based Curriculum
Positive Peer Group
ACHIEVEMENT
Contributors to Underachievement
Type III Interventions
Precursors to Achievement

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BEHAVIOURAL PROBLEMS

Reid & McGuire (1995), in their review of the literature pertaining to high-potential students with behavioural problems, cite several contributing variables:[70]

- lack of challenging and relevant content/curricula
- use of inappropriate instructional approaches/strategies
- use of extrinsic rewards and punishment for learning and classroom or behaviour management
- maintenance of climate that encourages conformity and convergent thinking
- insensitivity to individual differences
- emphasis on restricted, categorical labelling
- de-emphasis of environmental, cultural and social/emotional variables.

These authors hypothesize "that children and youth who exhibit irritating behaviours are less likely to be presumed gifted by their teachers, and are more likely to be misidentified and overlooked for appropriate [gifted] services" (Reid & McGuire, 1995).

... such information implies that when a child is not well adjusted, morally advanced, healthy, and so on, then he or she cannot be gifted.

Reid & McGuire
1995, p. 2

MINORITY STATUS

Alberta is a multicultural, multiracial, multiethnic and multilingual province. Census data indicates that in Alberta, the numbers of students from minority backgrounds (students with cultural, racial, ethnic and/or linguistic backgrounds that differ from European) continue to increase. This same data also suggest that being economically disadvantaged compromises the quality of education for many of these students from minority backgrounds.

While there are many inter- as well as intra-group differences, it has been noted that the greater the differences, especially linguistically, the fewer the numbers of identified students who are gifted. In 1992, a review of the transcripts of selected immigrant students receiving English as a Second Language (ESL) funding documented that while the provincial high school drop-out rate was 34 per cent, the rate was 61 per cent for students labelled ESL. The value placed on language proficiency, specifically English language proficiency, greatly reduces the opportunity for such students to be identified and referred for gifted education.

To say a test is biased is to charge that it is prejudiced or unfair to groups or individuals characterized as different from the majority of test takers. These groups may include ethnic minorities, women or men, individuals whose first language is not English, and persons with handicapping conditions.

Tittle, 1994,
p. 6315

The use of multiple criteria [for identification] reduces the chance that a gifted child with specific disabilities or a history of underachievement will be ignored. It serves social justice by increasing the possibility of recognition to poor, minority and other systematically different groups of children.

Shore et al.
1991, p. 49

The driving force behind the efforts to increase the representation of minorities and disadvantaged populations in the programs for the gifted is essentially one of achieving the twin goals of equity and excellence.

Passow, Monks &
Heller, 1993,
p. 899

. . . dependence upon present-day achievement and intelligence tests alone for the selection of gifted minority students denies many students a well-deserved opportunity to develop their abilities.

Baldwin, 1991,
p. 426

Often, systemic racism is explicitly or implicitly cited as the root cause of underrepresentation. Systemic racism expresses itself in various practices. First, there are selective referrals resulting from teachers' attitudes toward students from minority backgrounds. Also, due to test bias, minority students often are overlooked in the selection process.

Following is a list of barriers to identifying gifted disadvantaged and culturally different students:[71]

- attitudes and expectations of educators who often do not believe there is giftedness in culturally different populations
- over-reliance on intelligence tests as the prime criterion for identification
- a rigid learning environment and an inflexible curriculum which fail to take into account the individual needs and learning styles of these populations
- failure to provide the necessary general education, basic skills foundation and how-to-learn skills required for the further development of specialized talents
- failure of schools to understand the significance of a mother tongue other than English, belittling language habits and speech patterns, and failure to provide bilingual education where needed
- failure to create a learning environment where attention is given to both the affective and cognitive elements of talent development
- failure to select, assign and provide appropriate inservice education to teachers, counsellors, administrators and other educators who must create the conditions for learning and who, by serving as the gatekeepers for programs and services, are critical in talent development
- failure to help culturally different students enhance their self-esteem and recognize that systematic and long-term discrimination contributes to lower self-perceptions.

To resolve the problem of identifying disadvantaged and culturally different students, a number of steps must be taken:

- shift the emphasis from being gifted to developing gifted behaviours
- adopt a more inclusive, flexible and instructionally oriented conception of giftedness
- include content that is part of the ethnic cultures in designing learning experiences
- use community resources, including parents, in the development of appropriate programs.

PHYSICAL AND/OR SENSORY DISABILITY

Students who have orthopedic, visual or hearing disabilities may also have outstanding ability in academic pursuits. Teachers must avoid a tendency to let the traits of the disability get in the way of recognizing the intellectual potential.

HIGHLY GIFTED

Students who are highly gifted have generally been those with IQs of 145–159 and above. Students in this range need:

- a profile of their unique academic and non-academic strengths and weaknesses
- counselling support in dealing with frustration of being much more academically precocious than their peer group
- major restructuring of the curriculum.

Feldman (1991) defines a prodigy as a child who before the age of 10 performs at the level of an adult professional in some cognitively demanding field. Morelock & Feldman (1997) found that for each child prodigy mentioned in the literature, the child had extraordinary natural ability and was born into a family that recognized, valued and fostered that ability when it was first revealed. They add that the child was exposed to instruction by a master teacher possessing superior knowledge of the domain and its history. Personal qualities of the child prodigy are inner-directedness and a passionate commitment to the field of extraordinary achievement. Morelock & Feldman caution that may come at the expense of social and emotional development, as prodigies often have friendships restricted to a small group of others with an interest in the same specialization. Although they may have exceptional abilities in one domain, they may experience frustration in not having equal success in other areas and are not prepared to deal with failure.[72]

CONCLUSION[73]

In conclusion, the following criteria may guide the identification of students who are gifted:

- employ as broad a range of identification measures as practical, including both subjective and objective techniques
- use multiple criteria to define giftedness (focus on diversity and the expression of talents in different ways, rather than purely homogeneous, convergently gifted students)
- aim to include students rather than exclude them

Identification Through Learning Opportunities
It involves the creation of environments that will make it possible for students to engage in rich learning opportunities as a means of displaying gifted behaviors and talent potential

Frasier &
Passow, 1994
p. xvii

- avoid excluding a student from selection by a single measure alone
- use flexible approaches to identification
- identify needs on an ongoing basis (regular reviews of progress may indicate fluidity regarding which students should move in or out of various programming options; different students may well be identified as suitable for different forms of educational provision)
- use measures appropriate to different stages of student development
- employ specific measures sensitive to identifying students in potentially disadvantaged groups, such as teenage girls, culturally different groups and economically disadvantaged students
- ensure early recognition and intervention for students
- utilize the specialist skills of appropriate professionals across various areas of expertise.

Remember:

- the key aim of identification is to provide educational services for students
- the provision of stimulating and enriching programs in a challenging school environment in which difference is accepted and talents are nourished, may encourage students to choose appropriate programming.

What schools and school districts value in serving students who are gifted and talented will guide them in their definitions, identification procedures and instructional services. It is critical to ensure the values expressed in the identification program are the same as those expressed in the instructional program to provide both learning opportunities and an appropriate environment in helping these students achieve their potentials.

IDENTIFICATION PROCESS RESOURCES

There is a great need to create and implement new, flexible, diagnostic conceptions of identification, rather than retain a focus on in/out placement and selection criteria.

Some models and approaches which provide services to more students by changing the way students are identified, and in which there is greater emphasis on talent development, flexibility and student needs follow.

- DISCOVER: Discovering Intellectual Strengths and Capabilities through Observation while allowing for Varied Ethnic Responses (Maker, 1993, 1996).
- Gagné's Differentiated Model of Giftedness and Talent (Gagné, 1991, 1993, 1995).
- Gardner's Theory of Multiple Intelligences (Gardner, 1983, Gardner & Hatch, 1989).
- Individualized Programming Planning Model (Treffinger, 1986).
- Integrated Curriculum Model (ICM) (Van Tassel-Baska, 1994, 1995).
- Purdue Three-Stage Model (Feldhusen & Kolloff, 1986; Feldhusen & Robinson, 1986; Feldhusen, 1995).
- Schoolwide Enrichment Model (Renzulli & Reis, 1985; Renzulli, 1994, 1995).
- Talent Identification and Development in Education (TIDE) (Feldhusen, 1992, 1994).

SECTION 4: CHARACTERISTICS OF CREATIVELY GIFTED STUDENTS IN THE VISUAL AND PERFORMING ARTS

The experiences children have and the interests developed during childhood appear to strongly influence the later development of their talents.

Sloane, 1985, in Doxey & Wright, 1990, p. 425

The encouragement of parents, teachers and role models is important in the development of students gifted in the fine arts. Their talents prosper through instruction given by nurturing, knowledgeable teachers and professionals in the specific arts field. Identification, enrichment and strategies for designing curriculum modification are essential for the nurturing of students' special abilities.

Students capable of high performance in the visual and performing arts can be identified as a subgroup of gifted and talented students. Students gifted in the fine arts are those who demonstrate superior abilities in dance, theatre, creative writing, instrumental or vocal music and visual arts. Supportive teachers are essential to developing a context in which these students feel comfortable demonstrating their abilities. Many of these students are highly motivated, fiercely committed to their art, and show a great deal of creativity and originality in their productions.

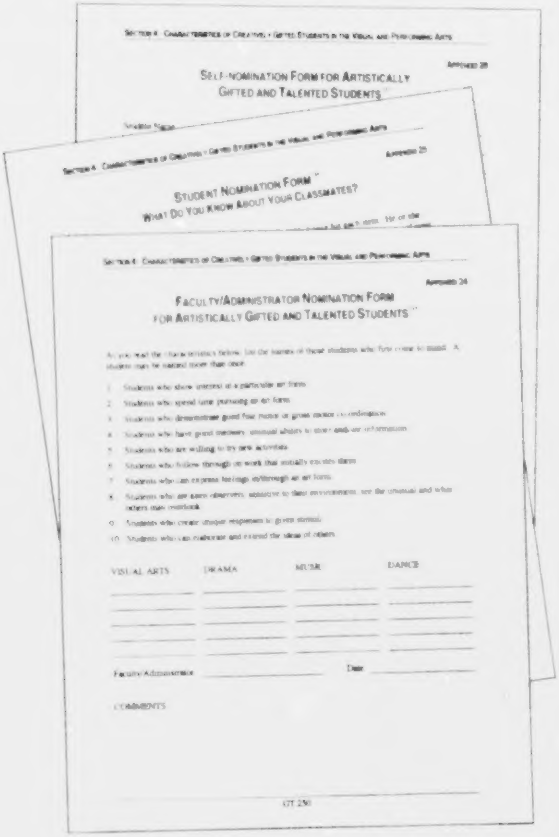
Students gifted in the fine arts must be observed closely in their out-of-school and extra-curricular activities for effective identification. One way to identify students who are gifted and talented is to formulate student profiles based on the following wide array of data.[74]

- Preschool development information includes observations of students' early interests and talents, physical or intellectual precocity, and social and emotional maturity.
- Psychometric information includes data about students' aptitude (musical, movement, performance or visual expressions), creativity, interest and performance. Sources of this type of data are varied and include aptitude and standardized tests, interest inventories, self-ratings and peer ratings.
- Performance information includes audition, exhibition or performance records; audio/video or photographic records, or developmental portfolios.
- Motivational information includes students' written or verbal expression of interest and commitment, as well as evidence gleaned from the previous sources.

GUIDELINES FOR THE IDENTIFICATION OF GIFTED STUDENTS IN THE VISUAL AND PERFORMING ARTS

The South Carolina Department of Education developed *Guidelines for the Identification of Artistically Gifted and Talented Students*, which describes a three-step process for identifying students who are artistically gifted and talented.

The following steps narrow the process for selection from a broad talent pool.[75] The steps have application in both the visual and performing arts.



Section 4: Characteristics of Creatively Gifted Students in the Visual and Performing Arts

Appendix 26

SELF-NOMINATION FORM FOR ARTISTICALLY GIFTED AND TALENTED STUDENTS

Student Name

Section 4: Characteristics of Creatively Gifted Students in the Visual and Performing Arts

Appendix 25

STUDENT NOMINATION FORM

WHAT DO YOU KNOW ABOUT YOUR CLASSMATES?

Section 4: Characteristics of Creatively Gifted Students in the Visual and Performing Arts

Appendix 24

FACULTY/ADMINISTRATOR NOMINATION FORM FOR ARTISTICALLY GIFTED AND TALENTED STUDENTS

VISUAL ARTS DRAMA MUSIC DANCE

Faculty/Administrator Date

COMMENTS

GT.250

STEP ONE — INITIAL SCREENING

Initial screening should be used to identify students who show aptitude for the fine arts. These are students who may benefit from intense exploration and in-depth study in one or more of the fine arts. Initial screening forms may be developed to solicit information from several sources about individual students. Some examples are included in the appendices:

- Faculty/Administrator Nomination Form for Students who are Artistically Gifted and Talented (Appendix 24, page GT.250)
- Student Nomination Form (What Do You Know about Your Classmates?) (Appendix 25, page GT.251)
- Self-nomination Form for Students who are Artistically Gifted and Talented (Appendix 26, page GT.252).

In addition to these specific screening forms, teachers may wish to generate forms to gather input from parents.

STEP TWO — SPECIFIC SCREENING

Specific screening is the process of selecting students who are potentially gifted and talented who need expanded, intense and individual challenges and experiences. Approaches to screening might include:

- checklists: created by teachers or commercially available and identified by teachers as appropriate — base responses to the checklist on student behaviours observed throughout the school year

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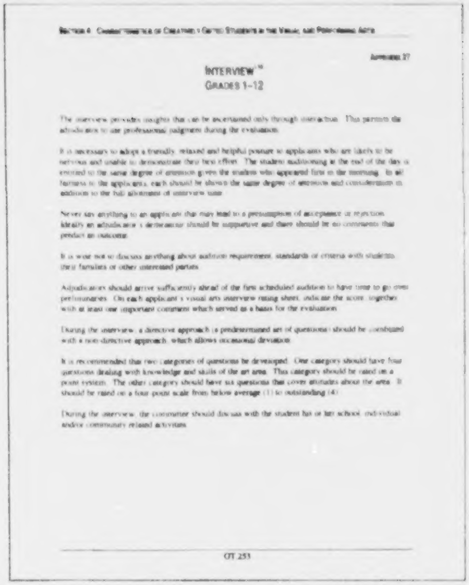
- auditions: conducted by those with expertise in the artistic area — useful in establishing a talent pool of students with high potential in one or more of the arts.

STEP THREE — FINAL SCREENING

Final screening includes:

- final audition: further screening for identification of those deemed to be top performers
- interview: a follow-up step to determine individual interest and motivation (Appendix 27, page GT.253).



SECTION 4 CHARACTERISTICS OF CREATIVELY GIFTED STUDENTS IN THE VISUAL AND PERFORMING ARTS

APPENDIX 27

INTERVIEW™
GRADES 1–12

The interview provides insights that can be ascertained only through interaction. This permits the adjudicators to use professional judgment during the evaluation.

It is necessary to adopt a friendly, relaxed and helpful posture to applicants who are likely to be nervous and unable to demonstrate their best effort. The student auditioning at the end of the day is entitled to the same degree of attention given the student who appeared first in the morning. In all fairness to the applicants, each should be shown the same degree of attention and consideration in addition to the full allotment of interview time.

Never say anything to an applicant that may lead to a presumption of acceptance or rejection. Ideally an adjudicator's demeanour should be supportive and there should be no comments that predict an outcome.

It is wise not to discuss anything about audition requirements, standards or criteria with students, their families or other interested parties.

Adjudicators should arrive sufficiently ahead of the first scheduled audition to have time to go over preliminaries. On each applicant's visual arts interview rating sheet, indicate the score, together with at least one important comment which served as a basis for the evaluation.

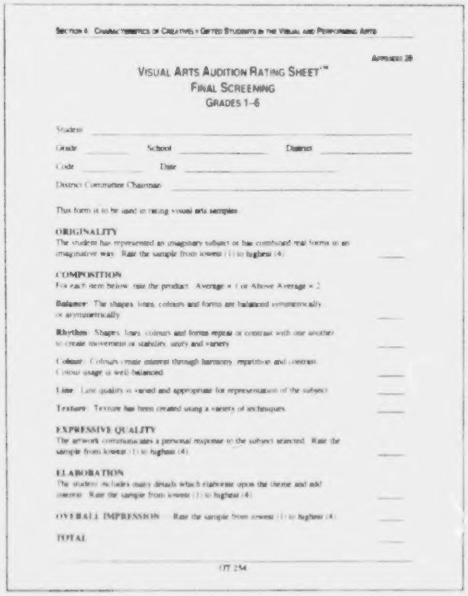
During the interview, a directive approach (a predetermined set of questions) should be combined with a non-directive approach, which allows occasional deviation.

It is recommended that two categories of questions be developed. One category should have four questions dealing with knowledge and skills of the art area. This category should be rated on a point system. The other category should have six questions that cover attitudes about the area. It should be rated on a four point scale from below average (1) to outstanding (4).

During the interview, the committee should discuss with the student his or her school, individual and/or community related activities.

GT.253

Appendix 28 (page GT.254) provides an example of a checklist relevant to the visual arts.



SECTION 4 CHARACTERISTICS OF CREATIVELY GIFTED STUDENTS IN THE VISUAL AND PERFORMING ARTS

APPENDIX 28

VISUAL ARTS AUDITION RATING SHEET™
FINAL SCREENING
GRADES 1–6

Student ____________________
Grade ________ School ____________ District ____________
Code ________ Date ________________
District Committee Chairman ________________

This form is to be used in rating visual arts samples.

ORIGINALITY
The student has represented an imaginary subject or has combined real forms in an imaginative way. Rate the sample from lowest (1) to highest (4). ______

COMPOSITION
For each item below, rate the product. Average = 1 or Above Average = 2

Balance: The shapes, lines, colours and forms are balanced symmetrically or asymmetrically. ______

Rhythm: Shapes, lines, colours and forms repeat or contrast with one another to create movement or stability, unity and variety. ______

Colour: Colours create interest through harmony, repetition and contrast. Colour usage is well balanced. ______

Line: Line quality is varied and appropriate for representation of the subject. ______

Texture: Texture has been created using a variety of techniques. ______

EXPRESSIVE QUALITY
The artwork communicates a personal response to the subject selected. Rate the sample from lowest (1) to highest (4). ______

ELABORATION
The student includes many details which elaborate upon the theme and add interest. Rate the sample from lowest (1) to highest (4). ______

OVERALL IMPRESSION — Rate the sample from lowest (1) to highest (4). ______

TOTAL ______

GT.254

VISUALLY GIFTED

Students who express themselves visually must have support systems that provide nurturing, guidance and instruction to help them realize their abilities and interests. It is important that students who are exceptionally adept in expressing themselves visually reach their creative potential and are recognized for it.

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DETERMINING VISUAL GIFTEDNESS

There are a number of characteristics that teachers should be aware of when defining and identifying students who are artistically gifted.

- Culture and background — Students from different cultures may not place the same importance on visual expression, may not exhibit their ability or may be self-conscious about it.
- Personalities and values — Students who are economically disadvantaged may consider artistic expression frivolous and a waste of time. Parents and peers as well as the students themselves can influence the time spent on artistic expression.
- Gifted and artistically gifted — Students who are gifted in academic areas often, but not always, show a high correlation of giftedness in visual arts. Some students who are artistically gifted do not score high in academic intelligences.
- Age — Although arguments are raised that age is a factor in identifying artistic giftedness, it is difficult to identify students who are visually gifted before the age of five. A visually rich environment, physical development, co-ordination of the child, previous experience with art materials and parental encouragement assist in early development of artistic abilities.

For the most part, artistically talented students exhibit special abilities and skills like drawing and construction that are well in advance of their peers. These traits include attention to detail and elaboration, proportion, originality and expressive qualities. They tend to stay on task longer and be more self-motivated, partly because they derive more pleasure from their work and partly because they see greater possibilities in the problem or assignment (Hurwitz, 1983).

SELECTION AND IDENTIFICATION PRACTICES

Programs that identify students who are visually gifted should include a variety of selection procedures:

- nominations based on students' interests and desires
- peer nominations; students who are shy or who undervalue their work can benefit from peer nominations
- portfolio of work which can be viewed by a knowledgeable evaluator — criteria can be predetermined so as to be fair and consistent with submission and assessment
- interview specific to the program with interview checklists structured by program designers

- observation by teachers. Teachers must be aware of age/grade categories and appropriate identification measures through observation of the artistic process, behaviour and product. Refer to the *Art Elementary Curriculum Guide* (Alberta Education, 1985), pages 39–43, for stages of children's visual art development in order to identify students who are exceptional.

Understanding child development is critical to the implementation of an art curriculum and development of strategies for students who are visually gifted. "It is important for teachers to keep in mind that each child is unique and so is every classroom of children. Each child is unique because he or she grows at his or her own rate in all areas of development: physical, cognitive, emotional, social and spiritual. Every child goes through the same stages of development but at different rates and at different times" (Alberta Education, 1985). Students who are visually gifted will demonstrate drawing, painting, modelling and other visual art abilities beyond their age, grade or peer group.

CLASSROOM STRATEGIES TO ENCOURAGE VISUAL ARTS DEVELOPMENT

The following strategies encourage development in the visual arts.

- Have a wide variety of materials, media and tools available for drawing, painting and printmaking, including crayons, pastels, chalk, inks, brushes and surfaces/papers.
- Have a wide variety of construction and modelling materials and tools to carve, construct, glue and nail as well as opportunities to cut, tear and paste; e.g., wallpaper paste, hammer and nails, staples, tape, etc.
- Develop a rich visual and tactile environment filled with natural and man-made objects.
- Bring in guest models, animals, animal skeletons, antiques, machine parts; dress up students as models; project an image or spot light on models.
- Organize a gallery visit; investigate the arts of various cultures; bring in a guest artist.
- Encourage discussion of art works with an understanding of the design principles of balance, movement, rhythm, emphasis, variety, unity, contrast, pattern, centre of interest. Describe, analyze and interpret works for meaning, and judge the value of the visual statement (Naested, 1998).

- Exhibit all student work and avoid competitions. "Competitions promote unrealistic expectations of children" (Alberta Education, 1985).
- Avoid stereotyped activities that require step-by-step directions where the result is 25–30 identical products. "This kind of busy work does not allow the child his or her own expression and thus defeats the purpose of having children make art in school" (Alberta Education, 1985).
- Visually gifted students possess high standards and goals, are self-critical and have a dislike for rigid time schedules. "They learn best if they have time to discover, explore and experiment, and if they can work on challenging projects and solve problems of an open-ended nature. These students should be given a variety of choices that encourage decision making and be challenged to work with ideas as well as materials" (Naested, 1998).
- Use various methods to enrich students' experiences through interdisciplinary instruction, integrated curriculum built around big topics or themes, independent study, mentorship and internship.

MUSICALLY GIFTED

Early music experiences as well as the inheritance of musical potential influences musical aptitude or the potential for musical achievement. Early exposure to music may well be the most important determining factor of the extent to which students will be able to create musically when they are older (Gordon, 1989). Students' social and physical environments play major roles in helping determine musical success. These include:

- parental interest in music
- exposure (available instruments, singing, tapes, records, participation in other musical activities)
- the belief that music is important
- the student's internal motivation (Doxey & Wright, 1990).

Early identification is of utmost importance for developing gifts and talents in young children. "Given that infants and young children 'do' music spontaneously, the failure to encourage that behaviour (as opposed to the enormous amount of reinforcement given to speaking) not only misses a great opportunity but promotes withering of children's interest in going beyond their own raw level. Thus, when some children later take up music instruction, teachers are already working with remediation" (Weinberger, 1998).

There are many teachers who can train young children to be technically competent on an instrument. However, young, talented musicians also need to experience the warmth and feeling of music to receive an adequate music education. Care must be taken not to overload children so that music remains a joy. Some music programs, such as the Suzuki and Kodaly methods are specifically suited to young children.

The following are possible indicators of musical giftedness in young children:[76]

- perfect or absolute pitch
- ability to correctly reproduce melodies
- interest in musical instruments
- well-developed sense of rhythm
- ability to harmonize without training or with training at an early age
- fascination with the masters of music
- ability to play an instrument by ear
- ability to play an instrument without formal instruction
- composition of songs
- ability to identify musical instruments by sound
- deep, passionate love of music
- ability to read music without training
- fascination with, or gravitation toward music
- emotional involvement with music
- extreme sensitivity to music
- commitment to practise
- desire to perfect performance.

DETERMINING MUSICAL GIFTEDNESS

Beyond naturally developed talent, the most important aspect for continued development of musical talent is students' motivation and interest.

Music is a language to learn, however, learning to play an instrument or to sing does not constitute talent or achievement. Students' individual characteristics are also required for the development of musical ability. These include high levels of cognitive ability, visual and auditory perception "because the processing of music requires perceptual and intellectual functioning" (Shuter-Dyson, 1985). Musical aptitude is multidimensional, including tone, rhythm, creativity and improvisational aptitude (Gordon, 1989).

There are three different skill areas to consider in determining musical giftedness. To identify these skill areas, three procedures are suggested.[77]

Skill Area	Identification Procedure
performance skills	audition
creative ability, such as composition	analysis of student composition
verbal and musical-perceptual skills	evaluation of examples of student writing

CLASSROOM STRATEGIES TO ENCOURAGE MUSIC DEVELOPMENT

There are many strategies which teachers can use to encourage music development.

- Encourage students to take on not only the role of composer and performer, but also listener, evaluator, consumer and historian through involvement and research.
- Nurture students' abilities to respond effectively to the sounds, melodies and rhythms generated by playing, active listening and discussing a variety of music selections.
- Select many different varieties of musical compositions and styles to encourage students to appreciate music and use their imaginations to see musical imagery.
- Introduce classical composers and musical concepts.
- Encourage the use of instruments for students to create rhythmic patterns.
- Give students opportunities to construct their own musical instruments.
- Facilitate students' sense of tempo by using simple percussion instruments that provide beats or a grouping of beats.
- Bring various musical instruments into the classroom.
- Invite guest musicians to discuss their instruments and work.
- Set up interest, theme or listening centres based on time period, style or culture.
- Teach songs based on specific themes; e.g., seasons, weather, counting, etc.
- Talk with students about the vocabulary of music — use accurate vocabulary unobtrusively as a means of describing what your students are learning and/or experiencing.

- Use the computer to teach fundamental music skills. The effectiveness of the instruction is contingent upon available hardware and/or software. Many computer programs are fairly sophisticated and may only be useful for secondary students.
- Use electro-acoustic music programs to enable music students to create, alter and manipulate sound.
- Videotape or audiotape students during the process of learning to sing a song, play a musical instrument or during a performance to provide valuable additions to their learning portfolios and allow for reflection on their development.
- Play music in the classroom — often!

Formal Study

Formal study of music is important for the development of musical abilities. "The formal study of music enables young people to understand and appreciate more varied, more sophisticated and more complex music. It sharpens their perception, raises their level of appreciation and expands their musical horizons" (Lehman, 1993).

As students get older, peer pressure may discourage efforts in music. School groups, such as band and choir may help alleviate negative peer pressure and become a positive influence that encourages involvement. Arranging experiences for students to perform music with others of similar ability is generally a positive and enjoyable experience (Marek-Schroer & Schroer, 1993).

Further readings which may include inventories and tests for students who are musically gifted follow.

- Seashore, Carl E. (1919). Seashore Measures of Musical Talent is a battery of listening tests, commonly known today as the "Seashore Test."
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- Shuter-Dyson, R. & Gabriel, C. (1981). *The Psychology of Musical Ability* (second edition). London, England: Methuen.
- Dorhout, A. (1982). "Identifying musically gifted children." *Journal for the Education of the Gifted,* Volume 5, pp. 56–66.
- Gordon, E. E. (1982). *Intermediate Measures of Music Audiation.* Chicago, IL: G.I.A. Publications.

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- Wang, C. (1985). *Measures of Creativity in Sound and Music.* Unpublished manuscript. Available from Cecilia Wang, School of Music, University of Kentucky, Lexington, KY, 40506.
- Boyle, J. D. & Radpey, R. E. (1987). *Measurement and Evaluation of Musical Experiences.* New York, NY: Schirmer.
- Winter, G. (1987). *Identifying Children in Grades 1–3 who are Gifted and Talented in Visual and Performing Arts using Performance Rated Criterion.* ERIC Document No. ED 289 330.
- Webster, P. R. (1989). *Measures of Creative Thinking in Music: Administrative Guidelines.* Unpublished manuscript. Available from Peter R. Webster, School of Music, Northwestern University, Evanston, IL, 60201.
- Baum, S. M., Owen, S. V. & Oreck, B. A. (1996). "Talent beyond words: identification of potential talent in dance and music in elementary students." *Gifted Child Quarterly*, 40(2), pp. 93–101.
- Calgary Board of Education & Calgary Catholic School Division (1998). *Learning, Teaching and Assessment in Fine Arts.* A joint project for elementary and secondary teachers, Calgary.

GIFTEDNESS IN DRAMA

Giftedness in drama encompasses a variety of intelligences. Gardner's theory of multiple intelligences published in 1984 contends that there are at least seven types of intelligences. Although each intelligence can be used for artistic creation, no one intelligence is inherently artistic. A person with a high degree of linguistic intelligence might become a poet, novelist or dramatist, or instead a lawyer or journalist. A person with kinesthetic intelligence could become a dancer or athlete. For the purpose of identifying students gifted in drama, most teachers agree that there is no one specific test that is sufficient for identification purposes. Interviews, auditions and tasks specific to the Alberta curriculum should be used to supplement tests and inventories. There is, however, some agreement that the ability to get along with others is an important aspect, as drama is not a separate art form. For younger children, observations by parents, teachers and peers can be effective.

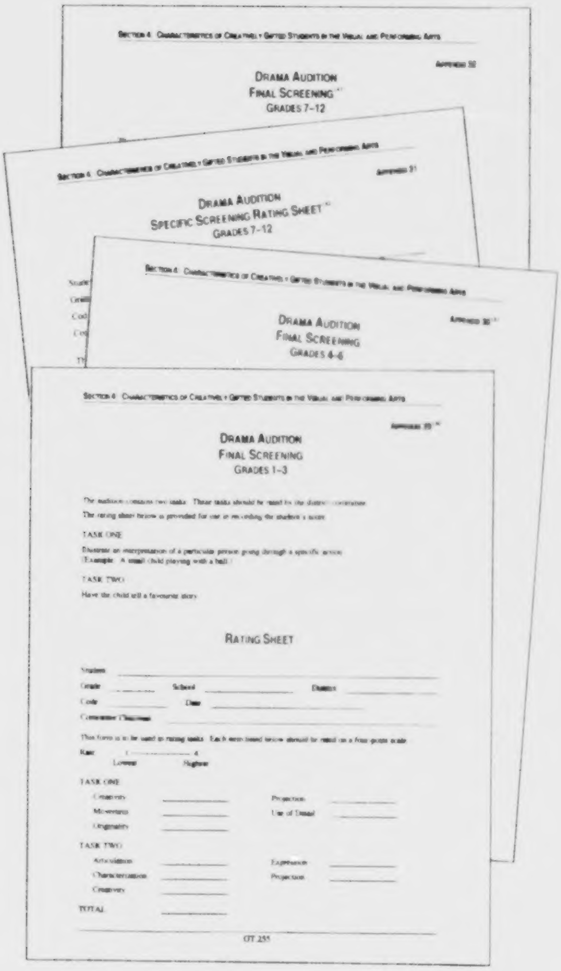
Observations should include:

- interest and motivation
- elaboration of thought
- ability to fantasize and imagine
- ability to communicate
- excellent memory
- sense of humour
- flexibility of thought
- attraction to aesthetic values
- uninhibited intellect
- presence (appearing right, confident and theatrical in front of others)
- ensemble (everyone is important in the creative process).

INVENTORIES AND TESTS

Inventories and tests are useful in identifying students who are gifted. In many cases, the type or combinations of types of inventories used are specific to the curriculum and to the task at hand. In some cases, inventories will apply for future potential, and in other cases, for immediate recognition. Teachers should use the test or inventory best suited to their own situations. They include:

- checklists
- interviews
- creativity tests: e.g., the Creativity Assessment Packet (CAP)
- auditions
- screening tasks
- role playing
- communications tests (speech)
- tests involving movement
- choral speech
- story telling
- confidence (extrovertism, risk taking).



Drama Audition
Final Screening
Grades 7–12

Drama Audition
Specific Screening Rating Sheet
Grades 7–12

Drama Audition
Final Screening
Grades 4–6

Drama Audition
Final Screening
Grades 1–3

TASK ONE

TASK TWO

Rating Sheet

TASK ONE

TASK TWO

TOTAL

GT.255

See Appendices 29–32 (pages GT.255–258) for assistance in these areas.

CLASSROOM STRATEGIES TO ENCOURAGE DEVELOPMENT IN DRAMA

Enrichment opportunities may take many forms.

- Accelerated programs enhance the drama disciplines of movement, speech, improvisation acting, theatre studies and technical theatre.
- Peer tutoring — students who are more advanced can assist in the teaching of others. This is enrichment for both learner and teacher. It is important to note that students who are gifted who tutor less-able students should experience further enrichment from this experience or it becomes ineffective.
- Professional theatre groups in co-operation with school drama departments offer teen classes all year.

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- Students should be encouraged to attend matinee performances at local professional theatres and read as much criticism of these as possible.
- Invite professionals to discuss and critique student productions.
- Encourage students to critique professional productions.
- Audition for all productions available, such as school productions, community productions and amateur theatre.
- Study varied theatre genres, as well as social studies and literature.
- Investigate locally developed courses, such as Advanced Acting/Touring Theatre 15, 25, 35.
- Hire or recruit professionals to provide workshops on specific aspects for program enrichment.
- Encourage professional development of teachers through academic courses, involvement in productions and workshops with professionals, and specialist councils; e.g., Fine Arts Council.
- Mentoring programs place promising students directly in touch with professional actors, playwrights, etc.
- Offer creative drama where students interpret events, stories or statements in their own actions and dialogue. Creative drama is not meant to be performed in front of an audience but rather to enhance artistic expression through artistic intellect and socially shared experiences. Creative drama encompasses:
  - imagination and creativity — students dress up and pretend to be someone else
  - pantomime — silent body language is used to convey what would have been conveyed with words
  - improvision — creative drama with sounds and expressive language
  - children's theatre — live play on stage.

A number of ways to evaluate strategies follows.

- Student evaluation — create a log book for observation and reflection of students' work as well as that of their peers. Organize it with section headings which represent activity, objective and reaction.
- Teacher evaluation — teachers can create marking guides specific to tasks, often with student input. Some forms of presentation for assessment could be: interviews, portfolios, photographs, narratives, descriptions, skill demonstrations, stage models, reviews/critiques, performances, seminars and discussions.

- Group evaluation — offer constructive criticism, avoiding attack.
- Festivals allow students to validate and affirm their skills in front of audiences of peers, professionals and the general public.
- Encourage parent feedback as participants in the whole production from acting to set design.
- Solicit feedback from friends and family on final projects.
- Create checklists with expectations and rating scales to mark specific abilities (curriculum based).
- Personal journal — encourage uncensored reflection on what has been learned.

TALENT IN THE PSYCHOMOTOR/KINESTHETIC DOMAIN

The student who is gifted in the psychomotor/kinesthetic domain can rapidly process the three phases of skill development (cognitive, associative, autonomous) beyond what is considered normal in the various stages of growth and development. Many factors can affect the speed at which skill development occurs and performance outcomes are attained, therefore it is important to recognize that athletes who are gifted can demonstrate a broad range of characteristics, including those previously described in the intellectual and affective dimensions, pages GT.38–44.

CHARACTERISTICS OF THE ATHLETE WHO IS GIFTED

Athletes who are gifted exhibit the following characteristics.

- They want to demonstrate/perform. They should be viewed as practitioners of co-ordinated movements whose focus is on the sensory, spatial and mechanical aspects of movement.
- They are recognized for their ability to acquire skill mastery and can synthesize, transfer and differentiate learned movements across the continuum of physical activity and sport.
- They tend to exhibit dominating behaviour, especially at younger ages. The desire to take over a game or activity can be a result of the need to compete.
- They tend to retain their skills under competitive pressure (where others will see their skill levels break down), while harnessing their emotional and analytical abilities to create or repeat the desired outcomes.

- They display a heightened sense of anticipation when dealing with outcomes. Through situational recall, they possess insights which enhance performance.
- They look forward to culminating activities or events that reinforce the mastery of systematically developed skills (the nurturing of a festive atmosphere surrounding the event serves to enhance these experiences).
- They demonstrate a high degree of self-efficacy and self-judgment of how well they can perform an action. Although all athletes are limited by their ability plateau, athletes who are gifted believe in their talents going into a performance and tend to do well as a result.

INSTRUCTIONAL IMPLICATIONS

Many athletes who are gifted have had opportunities outside of the classroom, in either structured or informal settings, where they can pursue their specific interests. Teachers need to decide how best to serve athletes who may have one or more areas of special interest within a curriculum that embraces a broad spectrum of activities. Some long-range and daily strategies follow.

- Use the strategies/tools found within this handbook, including lesson adaptation, learning contracts, independent study and problem solving within curriculum/activities to modify lessons for athletes who are gifted. Program goals reflect the individual nature of this type of programming and focus on the learner's depth of understanding as well as achievement of skill mastery.
- Use homogeneous (ability) groupings for all physical education classes if possible (Goodwin, 1997).
- Use self-differentiated tasking and modified competition sequences at the primary level to meet the needs of the under- or over-challenged. Use open-ended questioning techniques (How many can you . . .? How far can you . . .? How fast can you . . .?) to enable students to challenge themselves to their own limits. Consider uneven sides: e.g., 3–5 over-challenged vs. 1–2 under-challenged, in a competitive sequence while teaching game skills (Rowe, 1995).
- Consider implementing sport education programs. This type of program can provide a positive learning environment for all students in physical education, especially in the area of teaching sport in physical education. The essential features are:
  - skills are taught within the context of a game, rather than in isolation and students are expected to develop appropriate levels of skill

  - within a game unit, students take varying roles, including player, coach, referee, scorer and statistician
  - players are members of teams who participate in formal competition which is interspersed with teacher- and student-directed practice sessions (Hastie, 1996).

  The model caters to the needs of the athlete who is gifted who does not require prolonged periods of drill to master a skill.

- Try play-teach-play:
  - participate in the complete sequence
  - teach a specific technique
  - resume activity.

  This reinforces skill development within the context of the activity for upper grade levels. For the athlete who is gifted in the older age bracket, who is keen to perform, this teaching model reinforces the connection between skill development and performance outcomes in game situations. The "whys" and "hows" of becoming more competent are explained in context, bringing together theory and practice in a combined intellectual/physical experience (Graham, 1992).

- Use the athlete who is gifted as teacher/leader. Although not all athletes who are gifted covet this role, many find themselves cast as a leader or mentor with the subsequent social responsibilities that accompany such a role. Modification to the curriculum should be in place to assure that all parties involved view this in a positive manner.

DANCE MOVEMENT

Children do not start learning to dance by practising certain steps as adults do. Children start by moving (dancing) and fill in the technical details as they progress with instruction.

The common element found in all forms of dance is the rhythmical movement of the body for aesthetic purposes, but how this is achieved varies. When viewing dance forms (ballet, jazz, tap, folk, modern, creative) on a continuum, creative dance is placed at one end with ballet at the opposite end. Ballet is one of the most structured forms of dance.

Talent in dance comprises many related sub-skills:

- physical abilities
- co-ordination and agility
- motivation
- task commitment
- expressiveness and improvisational skill.

Students progress as they master body control, accept their bodies, co-operate with others and, finally, perform (Downey, 1995).

A student's ability is evident in the process as well as the product. The teacher evaluates the student's ability to respond, notice, concentrate, be curious, take risks and imitate. Teachers can look for evidence of dance ability under several categories including: space, time, performance and communication, composition and body management.

- Space — the forming or control of space includes shape and shaping, place and placing, mass, tension and progression. Is the dancer confident or timid? Are the movements open or close to the body?
- Time — includes duration, sequence, speed, rhythm and phrase. Are the beginning and end distinct? Is there continuity in movement?
- Performance and Communication — includes space/time, force, projection and the flow of energy. Is the performance controlled, energetic, clear, confident, polished? Does the work come across with conviction and meaning through body and facial expression? Is the composition of the dance coherent, well-structured and interesting?
- Composition and Body Management — includes skills and techniques, strength and flexibility, fitness, alignment, accuracy in observation and performance. The high-ability dancer controls body weight, and is accurate and fluent in the performance of complex sequences. Footwork is precise and alignment accurate, elevation and off/on balance appear effortless. The ability to see what is evident in each student's work and behaviour is developed through experienced observation and by sharing observations.[78] A professional dance instructor who has an understanding of developmental stages can assist in the evaluation and assessment of students' potential giftedness in dance/movement. This assessment can take place during a learning and teaching experience, which may include problems for students to solve, the learning of a new technique or viewing a personal interpretation of music/movement.

Classroom Strategies to Encourage Dance Development

Teachers can use the following strategies to encourage kinesthetic development with all students.

- Provide dance experiences with short-term resolutions for children aged five through eight who have short attention spans.
- Challenge students to explore large, full-body movement and identify body parts through smaller movements.
- Explore personal space to encourage students to become familiar with the use of their total range of movement around the axis of their bodies. This helps define their personal space. Have students pretend they are moving in a very large bubble.

GILBERT'S CONCEPTS AND DESCRIPTORS

- Have students experience movement spaces that they normally do not use . . . reach and stretch to all points of their axis, shrink and expand, high, medium, low, front, sides, diagonals, back. Students need to develop a large repertoire of nonverbal behaviour and expressive responses in order to communicate their ideas convincingly (Herman & Kirschenbaum, 1990). See Appendix 33, page GT.259 for dance concepts and the details of each concept.
- Encourage students to develop short sequences of one, two or three movements.
- Guide movement explorations, game structures and group improvisations that are important aspects of the dance experience.
- Have students animate storytelling or develop their own dances to stories or folk tales.
- Make a shape with the body, name the shape and then collapse out of it: the student has just learned a major dance concept — stillness and movement.
- Set up interest or theme centres based on time period, style or cultural dance. Provide students with actual information on folk dances of various cultures.
- Give students many and various opportunities to develop their own movement dance, solo or in groups.
- Encourage students to take on not only the role of composer and performer, but also listener, evaluator, consumer and historian through involvement and research.
- Invite guest musicians to discuss their instruments and their work.

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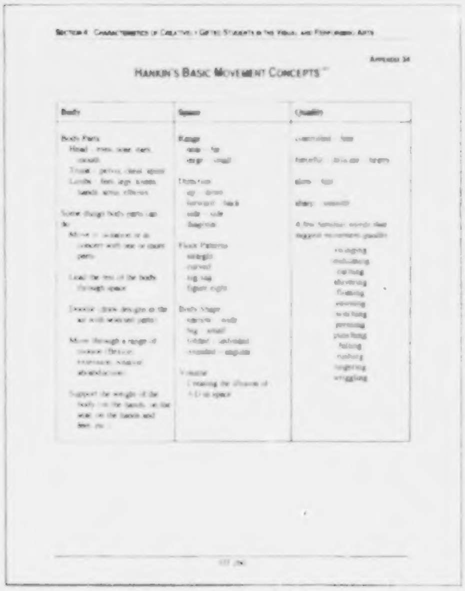

- Design activities that focus a whole movement session on two contrasting qualities: e.g., sharp and smooth, or on two contrasting uses of space: e.g., big and small. By helping students experience feelings and the different movements they evoke, the teacher will enrich the movement sessions for them. Follow the experiences with questions, such as: How does it make you feel? Have you seen . . .? What does it make you think of . . .? These questions help students to discover the expressive potential of movement. See Appendix 34, page GT.260 for more on basic movement concepts.
- Provide opportunities for students to use their bodies as a medium of expression. Encourage them to dramatize or role play stories or different outcomes to traditional folk tales (Edwards, 1997).
- Talk with students about the vocabulary of movement and music. Use accurate vocabulary unobtrusively as a means of describing what students are experiencing.
- Facilitate students' sense of tempo by simple percussion accompaniment that provides beats or a grouping of beats.
- Allow students to respond in ways that they can control their bodies and broaden the scope of their rhythmic expression.
- Provide students with lightweight colourful scarves, streamers, hoops, bean bags, balls, ribbons, parachutes. Scarves and streamers flow and move through space, and can be transformed into capes, wings, umbrellas, and define space on the floor.
- Videotape students through the process of developing or learning a dance or during a performance.

Assessment Tools for Dance/Movement[79]

Assessment tools may take a variety of forms. When observing the process of acquiring dance skills and the product of the acquisition ("skills" is used in the broadest sense to include skills in all areas of learning), assessment should include many of the following:

- anecdotal comments
- portfolios
- conferences
- journals, logs, notebooks
- reports

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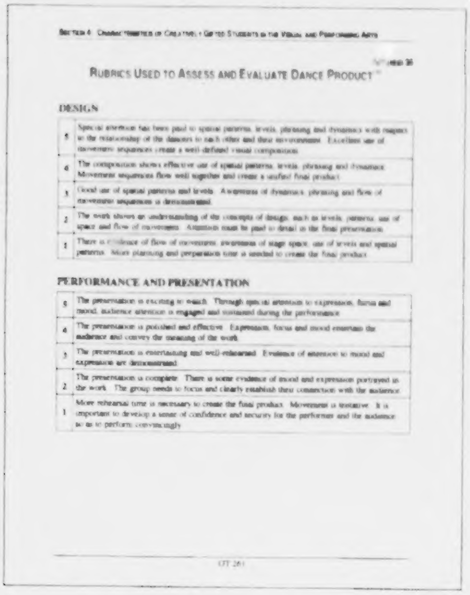

Section 4: Characteristics of Creatively Gifted Students in the Visual and Performing Arts

Appendix 36

Rubrics Used to Assess and Evaluate Dance Product

DESIGN

5	Special attention has been paid to spatial patterns, levels, phrasing and dynamics with respect to the relationship of the dancers to each other and their environment. Excellent use of movement sequences create a well-defined visual composition.
4	The composition shows effective use of spatial patterns, levels, phrasing and dynamics. Movement sequences flow well together and create a unified final product.
3	Good use of spatial patterns and levels. Awareness of dynamics, phrasing and flow of movement sequences is demonstrated.
2	The work shows an understanding of the concepts of design, such as levels, patterns, use of space and flow of movement. Attention must be paid to detail in the final presentation.
1	There is evidence of flow of movement, awareness of stage space, use of levels and spatial patterns. More planning and preparation time is needed to create the final product.

PERFORMANCE AND PRESENTATION

5	The presentation is exciting to watch. Through special attention to expression, focus and mood, audience attention is engaged and sustained during the performance.
4	The presentation is polished and effective. Expression, focus and mood entertain the audience and convey the meaning of the work.
3	The presentation is entertaining and well-rehearsed. Evidence of attention to mood and expression are demonstrated.
2	The presentation is complete. There is some evidence of mood and expression portrayed in the work. The group needs to focus and clearly establish their connection with the audience.
1	More rehearsal time is necessary to create the final product. Movement is tentative. It is important to develop a sense of confidence and security for the performer and the audience so as to perform convincingly.

GT.261

- checklists (created by a teacher and/or outside agency — see Appendix 35, pages GT.261–262)
- questionnaires (for teacher, student and parents)
- videotapes
- critiques (by student, teacher, peers and possibly a trained observer)
- tests (teacher/student created and standardized)
- performance critique (amateur or professional)
- peer teaching/coaching.

When a variety of assessment tools is used and information is gathered to create an assessment portfolio, all those involved form a clear idea of a student's understanding.

CURRICULUM MODIFICATION — DIFFERENTIATED CLASSROOM STRATEGIES FOR FINE ARTS

The following strategies have broad application across all the visual and performing arts.

INDEPENDENT STUDY

Independent study allows students to work at their own pace. Students who are gifted learn more quickly and more independently, and can concentrate for longer periods of time than students of average ability. They are generally motivated to learn intrinsically and tackle tasks in an organized goal-oriented manner. They prefer to explore and do things on their own. Section 5 provides further information regarding independent study (pages GT.148–157) including guidelines for teacher intervention, developing an independent study plan and further suggestions for success, including learning contracts.

PEER COLLABORATION

Peer collaboration and co-operative learning groups (formal, informal, brainstorming or response groups) can be used as a motivational strategy. There are many benefits to forming students into groups for discussion or research:[80]

- to provide an immediate forum to talk through ideas
- to encourage peer support for learning
- to help each other learn through consultation

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- to gain a diversity of perspectives or insights
- to provide the class forum for discussion
- to encourage reflection
- to understand relevance of information and ideas
- to learn through purposeful talk.

QUESTIONING TECHNIQUES

The primary purpose of questioning is to promote thinking. Poor questioning techniques can inhibit creative problem solving and risk taking (Naested, 1998). Section 5 discusses several techniques for questioning (including Bloom's Taxonomy), ways to encourage creative thinking through brainstorming, the SCAMPER technique and a six-step creative problem-solving model.

Bloom's Taxonomy could be used to generate questions about a particular piece of music.

Knowledge	Who composed the words to the song *Wind Beneath My Wings*?
Comprehension	How would you explain the metaphor of the title?
Application	Design a CD cover that illustrates the song.
Analysis	How is the theme of this song different from similar to the theme of *Send in the Clowns*?
Synthesis	Keeping the same theme, rhythm and mood, add a new verse to the song.
Evaluation	Tell why *Wind Beneath My Wings* would would not be an appropriate song to sing at a high school graduation ceremony.

LEARNING CENTRES[81]

Learning centres are sometimes also called activity, theme or interest centres. Use these centres to encourage independent learning or individualized instruction related to a specific theme or topic. One example of a centre which might be set up in a drama room would focus on the topic "Characterization in Plot Development." Title the centre, "Hat Terrific!" Place on display a variety of hats: e.g., sombrero, tam, pillbox, ball cap, toque, military headgear, etc. Design task cards that invite students to choose one hat, put it on and do one of the sample activities listed on the next page.

- Mime a brief episode of a scene where that particular hat might be worn.
- Write a script for a scene where the main character would wear the chosen hat.
- Describe the personality who would choose to wear a particular hat.

Students should be taught how the centre operates: the centre's learning objective, directions for use, and resource materials for research, investigation and project assignment.

DAILY LOG/JOURNAL

Records of thoughts, ideas, preliminary drawings, observations, collectibles, poems, musical scores and research on artists are valuable resources for student reflection and growth. Student journals can also give teachers an understanding of students' work habits and thought processes, and can become a tool for identification of giftedness in the fine arts.

USE OF COMPUTERS

Advancements in computer technology have greatly influenced artists, both visual and performing, and many students come to school with a high level of computer literacy. Students should be encouraged to take advantage of skill development opportunities, creative problem solving, and manipulation of images and sound through new technologies.

Computers can be used to generate images, view visual images, assist learning and demonstrate learning through multi-media presentations. However, it must be stressed that the computer is merely a new tool compelled to obey the will of the artist. Students should be discouraged from using pre-drawn clip art images. Whenever possible, use drawing and painting programs and/or have students scan their personally created images onto the hard drive or disc for placement and manipulation.

Computer music instruction has become popular. Most music programs teach fundamental music skills. The effectiveness of instruction is related to available hardware (Taylor, 1988). Students can learn to sing, listen and gain a range of other music fluency skills. The music literacy skills involved in reading, comprehending and notating music are also attainable (Thomas, 1990). Electro-acoustic music programs enable students to create, alter and manipulate sound. Some computer music programs may be too sophisticated for young learners and may be best introduced at the secondary level.

OPPORTUNITIES FOR ENRICHMENT IN THE FINE ARTS

Schools and community organizations can provide curricular enhancing activities to foster the development of artistic talent. A variety follow.

PRIVATE LESSONS AND TUTORS

To additionally enrich their regular school programs, some students are able to access private instruction. Trained teachers in the fine and performing arts disciplines can greatly assist in the skill development and talents of students gifted in the fine arts. These include instruction in instrumental music, vocal music, speech, dance, theatre and visual arts. They supplement in areas that may not be feasible in the classroom, due to teacher expertise, time, facilities or equipment; e.g., airbrush painting, oil painting, printmaking, specific musical instrument instruction.

ARTIST-IN-RESIDENCE

The placement of artists in schools to teach, create and perform over a period of time (several days or weeks) is often referred to as an artist-in-residence. Students have opportunities to experience first hand the artistic process and work alongside a practising artist. Students receive special insights into the creative process as well as specialized training. Artists can help students identify and understand the psychological and sociological implications of being an artist.

Artist-in-residence programs work best in a concentrated time frame, or over a long period of time (days/weeks), with a small group of students who have an expressed interest in the art form.

MENTORSHIP PROGRAMS

Through mentorship programs, students are provided with adult mentors who have special talents. Rather than a teacher-student relationship, mentors provide their proteges with close personal and professional relationships. Mentors become guides, role models, counsellors, teachers and friends. Educators must give careful thought when planning a mentorship relationship including preparing the student for the partnership. Students should know their topic, be able to work independently (self-motivated learner), have a desire for this opportunity, a passion or some expertise in the discipline and a commitment that is long-term. A close and exciting relationship between the adult and student can develop as they interact and engage in artistic experiences. Students derive numerous benefits through mentorship programs, especially in career development. See Section 5, pages GT.179–GT.183 for more on mentorship.

ADVANCED PLACEMENT

Advanced placement is designed to enable high school students to earn college credits while still in high school. Advanced placement in the fine arts is primarily for visual arts students. Students complete portfolios of work that is scored by experts. Work in drawing, design and art history are juried. The advanced placement program provides the necessary rigour that students who are artistically gifted require. Self-motivation, task commitment and love of learning are essential ingredients for success. See Section 5, pages GT.186–187, for more on advanced placement.

Acceleration for students gifted in the fine arts can be offered at any school which has fine arts personnel and programs flexible enough to meet the needs of their students who are gifted in the fine arts. For example, a Grade 7 student who is musically gifted is given the opportunity to study, practise and perform with Grade 9 band students.

GALLERIES AND MUSEUMS

Schools can enrich students' fine arts experiences through trips to museums and in-school and out-of-school performances. Galleries, museums, conservatories and festivals (music, special arts events, visual arts) offer tours and often short units of study in the history and appreciation of the art form. In preparation for field trips, teachers should discuss concepts and ideas which will be introduced or experienced during the outing. Back in the classroom, teachers should debrief the experience, or continue to expand or connect the investigation with the course curricula.

COMMUNITY ART CENTRES

Many communities offer programs for students during weekends and evenings at local community or leisure centres. In the visual arts, many of these programs are craft oriented, however artists with technique specialties are often available. Students who want to experience a high degree of craftsmanship and focus on specialty areas can enrich their talents and abilities.

ARTS CAMPS

Private enterprises, artists, arts groups and arts businesses often offer camps for students with interest in a fine arts discipline. These include such areas as instrumental music, choral music, theatre, voice, dance and specific visual art media — painting, ceramics, etc.

SUMMER PROGRAMS AND SATURDAY SCHOOLS

Institutions of higher learning often provide excellent instruction in summer or Saturday programs. Instructors are carefully selected and are specialists in their areas. Students enrolled in these programs usually receive superior enrichment. They include conservatories for instrumental music, voice, theatre, readers' theatre, dance (specific areas, such as ballet, tap, jazz, folk, modern, creative) and specific media instruction in visual arts (drawing, painting, sculpture, etc).

MAGNET FINE ARTS SCHOOL

Magnet schools or school-within-a-school variations meet the needs of the artistically gifted at both the elementary and secondary levels. Instructional delivery and administrative designs vary widely. The increase in specialized art schools is an expression of the belief that artistically superior students should be offered unique programs with greater depth and time commitment than can be found in most school programs. Artistically talented students become more aware, through participation in such programs, that there are other talented students like themselves. They benefit by sharing their common needs and interests. The programs bring students into contact with faculty who have specialized art skills, working artists, and other professionals in the arts.[82] Around the province there are several examples of fine arts magnet schools. Contact local jurisdiction central offices for more specific information.

ARTS PROPEL & PROJECT ZERO (HOWARD GARDNER, HARVARD UNIVERSITY)

Since its inception 20 years ago, Project Zero has been concerned with all phases of how humans develop artistic talent or intelligences (spatial, kinesthetic, musical). ARTS PROPEL, 'Project Zero' resources offer teachers practical education applications. These can be ordered over the Internet [http://www.projectzero.harvard.edu].

SECTION 5: STRATEGIES FOR DESIGNING AND IMPLEMENTING INSTRUCTION

This section explores specific strategies that teachers can use to facilitate learning experiences for students who are gifted and talented.

These learning experiences are part of a differentiated curriculum designed for gifted students. They are differentiated because they are considered to be an appropriate match between the recognized needs, abilities and interests of gifted students and the educational purposes and expectation held for these learners.

Kaplan, 1986,
p. 182

The key to addressing diverse needs in any classroom rests in the planning of differentiated activities. The question becomes, "How can the regular classroom experience be as successful as possible for gifted students?" (David Harvey, Assessment Specialist, Alberta Learning).

Teachers must have:

- a clear conception of giftedness
- an understanding of the unique individual needs of each student who is gifted
- a familiarity with the prescriptive curriculum
- a framework or model (or combination of theoretical models) to give direction and coherence to instructional planning that encompasses both enrichment and acceleration
- adequate resources to support programming choices.

The recognition and identification of the unique characteristics possessed by students who are gifted and talented have implications for learning activities. The following is a list of learning requirements:[83]

- provision of a large body of information on diverse topics
- maximum exposure to basic skills and concepts
- provision of learning activities at appropriate level and pace
- stimulation and access to reading material
- development of convergent abilities, especially logical deduction
- stimulation of imagination, imagery and spatial abilities
- experience in problem solving and creative thinking
- development of self-awareness and acceptance of own capacities, interests and needs
- stimulation to pursue advanced goals and aspirations
- development of independence, self-direction and discipline in learning
- experiences relating intellectually and effectively with like peers
- exposure to a variety of professions, endeavours and occupations.

The following table summarizes some core learning requirements of most students who are gifted and talented related to their unique characteristics.[84]

CHARACTERISTIC	**LEARNING REQUIREMENT**
- unusual retentiveness	- exposure to quantities of information
- advanced comprehension	- access to challenging curriculum
- varied interests	- exposure to a wide range of topics
- high level of verbal skills	- opportunities for in-depth discussions
- accelerated pace of thinking	- individually paced learning
- flexibility of thought processes	- diversity of problem solving
- goal-directed behaviours	- longer time-spans for tasks
- independence in learning	- more independent learning tasks
- sensitivity to the environment	- exposure to affective learning
- analytical thinking	- exposure to higher-level thinking
- self-motivation	- active involvement in learning
- high expectations	- exposure to accepting setbacks
- emotional sensitivity	- values exploration in small groups
- interest in adult issues	- exposure to real world issues
- holistic thinking	- integrated approach to the curriculum
- avid reader	- exposure to diverse materials

Students who are gifted and talented, in a differentiated learning environment, need time to learn on their own — individually and independently, time to learn with their chronological class peers, and time to learn with their mental age peers.

Optimal learning conditions for students who are gifted and talented are:[85]

- an open, respectful, co-operative relationship among teachers, students and parents for planning and programming

- an environment which is rich in materials, with simultaneous access to many learning activities and an emphasis on experimentation and involvement
- a curriculum which is flexible and integrative, developing out of student needs
- a minimum number of whole class lessons
- the student as an active participant in a learning process which encourages self-direction, inquiry, experimentation and intervention
- assessment, contracting and evaluation used as an aid to student growth in learning
- cognitive, affective, physical and intuitive activities as valued aspects of the classroom experience
- an atmosphere of trust, acceptance and respect.

CURRICULUM MODIFICATION

This section provides an overview of some strategies which have proven successful with gifted and talented students. Previously, these strategies were often taught as isolated skills in the hope that they would be transferred to other learning situations. Although these strategies are still useful, they need to be enfolded in a meaningful context so that students have a comprehensive repertoire to draw on in any given situation.

Ultimately, the effectiveness of a strategy is measured by whether or not the student can demonstrate the knowledge, skills or attitudes expected. Some tips:

- give a particular strategy time to work
- track strategies used with a particular student
- do not discount a strategy simply because it did not work in the past; the timing or the setting may not have been correct
- be prepared, however, to modify or change a strategy if student feedback suggests it is not working.

Appropriate curriculum modifications for gifted and talented students should be organized according to the educational needs and interests of students and teachers. The following chart explains the various strategies for differentiation, as well as suggestions for their use and why they would be appropriate in the instruction of students who are gifted and talented. Many of these strategies are described in the following pages.

Instructional and Management Strategies for Differentiation[86]

Strategy	Description of Strategy	Suggestions for Use with Gifted Learners	Why Appropriate for Gifted Learners
Compacting	Assesses student's prior knowledge on a topic. Excuses him or her from mastered material. Plans for learning what is not known and frees-up time for enrichment or accelerated study.	• Explain process to students and parents. • Document preassessment and plans/timelines for accelerated or enrichment study. • Allow for student choice in enrichment study.	• Recognizes prior knowledge and allows for independent pursuit in areas of interest or passion. • Eliminates boredom.
Independent Projects	Student and teacher identify problems or topics of interest to the student and plan investigation and synthesis for findings.	• Build on student interest. • Allow freedom, but provide scaffolding and guidance. • Negotiate and document criteria, goals, timelines. • Use process log to document project proceedings.	• Allows for long-term in-depth work in areas of passion and interest. • Teaches planning and research skills. • Encourages independence and motivation. • Allows work with complex and abstract ideas.
Interest Centres/Groups	Offers enrichment and meaningful study for students who can demonstrate mastery with required work.	• Ensure the task is suitably complex. • Allow students of like interests and abilities to work together. • Involve learner in creating centre or group. • Allow large blocks of time. • Provide more depth in fewer topics.	• Allows opportunity for study in greater breadth and depth, and in areas beyond regular curriculum. • Allows for student choice. • Enables and encourages students to make connections between fields and topics.
Flexible Skills Grouping	Students are placed into groups according to their readiness and needs. Movement among groups is based on ability and growth in a given skill.	• Exempt learners from already mastered basic skills work. • Place required skill work in a meaningful context. • Ensure development of advanced knowledge and skills in areas of talent.	• Acknowledges quick mastery and recall of information. • Provides opportunity for participation in advanced work and development of advanced skills, such as production and expression. • Allows independent work at student's own pace

Instructional and Management Strategies for Differentiation (cont'd)

Strategy	Description of Strategy	Suggestions for Use with Gifted Learners	Why Appropriate for Gifted Learners
Tiered Assignments	In a heterogeneous grouping, use varied levels of activities and approaches to suit students' abilities. Build on prior knowledge and prompt continued growth.	• Use advanced materials. • Ensure open-ended, complex activities that require students to transform ideas rather than merely reproduce them.	• Provides meaningful work with peers of similar interest and readiness. • Allows early exploration and application of principles. • Encourages broader reading.
Learning Centres	Provide stations or collections of materials learners use to explore topics or practise skills. Provides study in greater breadth and depth on interesting and important topics.	• Ensure learning-centre tasks that require transformation and application. • Build in student choice, rather than requiring all students do all tasks at all centres. • Monitor what students do and learn at centres.	• Draw on and develops advanced thinking, reading, research and technology skills. • Allows for independence.
Mentorships/ Apprenticeships	Student works with a resource teacher, media specialist, parent volunteer or community member to develop a project. Helps students develop skills of production in a field and career awareness.	• Match the mentor with student's talent/interest area. • Document agreements concerning roles, goals and progress for mentor, student, teacher and parent.	• Allows students to work on expert-level problems and tasks in relevant context. • Allows adult-level conversation. • Introduces student to meaningful yardsticks of performance. • Draws on creativity.
Contracts/ Management Plans	Establishes an agreement between student and teacher outlining arrangements for agreed-upon tasks and methods of completion.	• Focus the contract on concepts, themes or problems and integrate basic skills into required projects or products. • Establish clear and rigorous rules and standards for success in writing at the outset.	• Eliminates need for unnecessary skills work and places skills in relevant, high-interest tasks. • Allows for independent, advanced, extended study on topics of interest. • Encourages students to generalize, make connections and be original.

Instructional and Management Strategies for Differentiation (cont'd)

Strategy	Description of Strategy	Suggestions for Use with Gifted Learners	Why Appropriate for Gifted Learners
High-level Questions	Teacher poses questions that draw on advanced levels of information, require leaps of understanding and challenge thinking in class discussions and on tests.	• Use open-ended questions which require learners to combine advanced information with complex thinking requirements. • Require students to defend answers.	• Taps into thinking talents. • Develops metacognition (awareness of one's thinking). • Moves student beyond easy facility with glib answers to developing logic and integrity in substantiating answers with reason and evidence.

STRATEGIES FOR INSTRUCTION

The boxes included in the left margins of this section indicate which theoretical models support the various strategies discussed. See Section 2 for more information on the models.

Questioning Techniques

Models	Marland	✓
	Renzulli	✓
	Gardner	✓
	Sternberg	✓
	Treffinger	✓
	Gagné	
	Stanley	
	Feldhusen	✓
	Betts	✓

Through effective questioning, students can be taught to put together facts and evidence, understand concepts or "big ideas," draw conclusions, determine and support generalizations, and identify and support theories. Open-ended questions invite more thinking, both critical and creative, and nurture the development of students' capacity to frame their own questions. Ultimately, the goal is to have students ask more productive questions.

See the following page for sample questions.

Sample Questions

Type	Goal	Key Strategies	Examples
Quantity Questions Questions which elicit "listing" responses	To balance reproductive and productive responses	Brainstorming	*Reproductive questions* List the capital cities of Canada's 10 provinces. *Productive questions* Choose a new capital city for each of any five provinces and provide reasons to support each choice.
Compare/Contrast Questions Questions which direct attention to similarities and differences	To stimulate high-level thinking	Using forced associations	How is friendship like a peanut butter sandwich? How is a peach different from a watermelon?
Feelings/Opinions/ Personification Questions Questions which invite students to respond from a personal perspective	To motivate students to value their opinions	Partnering . . . bringing teacher and student together on an emotional level	Would you rather watch a video or read a novel? Give reasons for your choice.
Divergent Questions Questions which prompt a reorganization of reality	To foster creative thinking	Brainstorming in small groups, with partners	What would happen if Wayne Gretzky became your teacher for a day? In what ways might you use a brick?
Open-ended Questions Questions which require more than one answer; questions that cannot be answered with a simple "yes" or "no" response	To encourage consideration of many possible answers	Synthesizing, analyzing, evaluating	What are some things that happen when computers replace employees? How might Quebec be encouraged to remain in Canada?

Higher Order Thinking: Questioning and Beyond

Bloom's Taxonomy[87]

Bloom's model describes six levels of thinking, arranged in a sequential manner (Knowledge, Comprehension, Application, Analysis, Synthesis, Evaluation). Susan Winebrenner has altered the original sequence. She places evaluation before synthesis because she believes that students need to evaluate their opinions after analysis. This arrangement implies that the two lower levels (knowledge and comprehension) require more literal and less complex thinking than the upper or higher levels (analysis, evaluation and synthesis). Application is somewhat of a "swing" category, depending on the complexity of the task.

- **Knowledge** is simply recall. Students can say they know something if they can recall it to recite or write down.
- **Comprehension** means students can say what they know in their own words. Retelling a story, stating the main idea, or translating from another language are several ways in which students can demonstrate that they comprehend or understand what they have learned.

- **Application** means that students can apply what they have learned from one concept to another. For example, they might use their knowledge of fractions to double a baking recipe or may be required to decide when to use certain math formulas.
- **Analysis** means that students can understand the attributes of something so that its component parts may be studied separately and in relation to one another. Asking students to compare and contrast, categorize and/or recognize inference, opinions or motives provides experience in analysis.
- **Evaluation** gives students opportunities to judge what they have analyzed. For this reason, the model that follows considers evaluation before analysis, since it is natural to ask students to give their opinions or state preferences about something they are analyzing.
- **Synthesis** is the most complex and difficult level of thinking. It requires students to create a thought, idea or product that is novel or original. All the activities called creative thinking give students experience with synthesis. Going further, when students can take bits and pieces of several theories or combine ideas from different sources to create an original perspective, they are engaging in synthesis.

Taxonomy of Thinking

Category	Definition	Trigger Words	Products
Synthesis	Re-form individual parts to make a new whole	compose, design, invent, create, hypothesize, construct, forecast, rearrange parts, imagine	lesson plan, song, poem, story, ad, invention
Evaluation	Judge value of something vis-a-vis criteria Support judgement	judge, evaluate, give opinion, viewpoint, prioritize, recommend, critique	decision, rating/grades, editorial, debate, critique, defence/verdict
Analysis	Understand how parts relate to a whole Understand structure and motive Note fallacies	investigate, classify, categorize, compare, contrast, solve	survey, questionnaire, plan, solution, report, prospectus
Application	Transfer knowledge learned in one situation to another	demonstrate, use guides, maps, charts, etc., build, cook	recipe, model, artwork, demonstration, crafts
Comprehension	Demonstrate basic understanding of concepts and curriculum Translate to other words	restate, give examples, explain, summarize, translate, show symbols, edit	drawing, diagram, response to question, revision
Knowledge	Ability to remember something previously learned	tell, recite, list, memorize, remember, define, locate	workbook pages, quiz, test, exam, vocabulary, facts in isolation

Other Uses for Bloom's Taxonomy

Teachers can use levels of questioning to provide assignments that meet a wide range of needs and provide choices so that students become more engaged in their own learning.

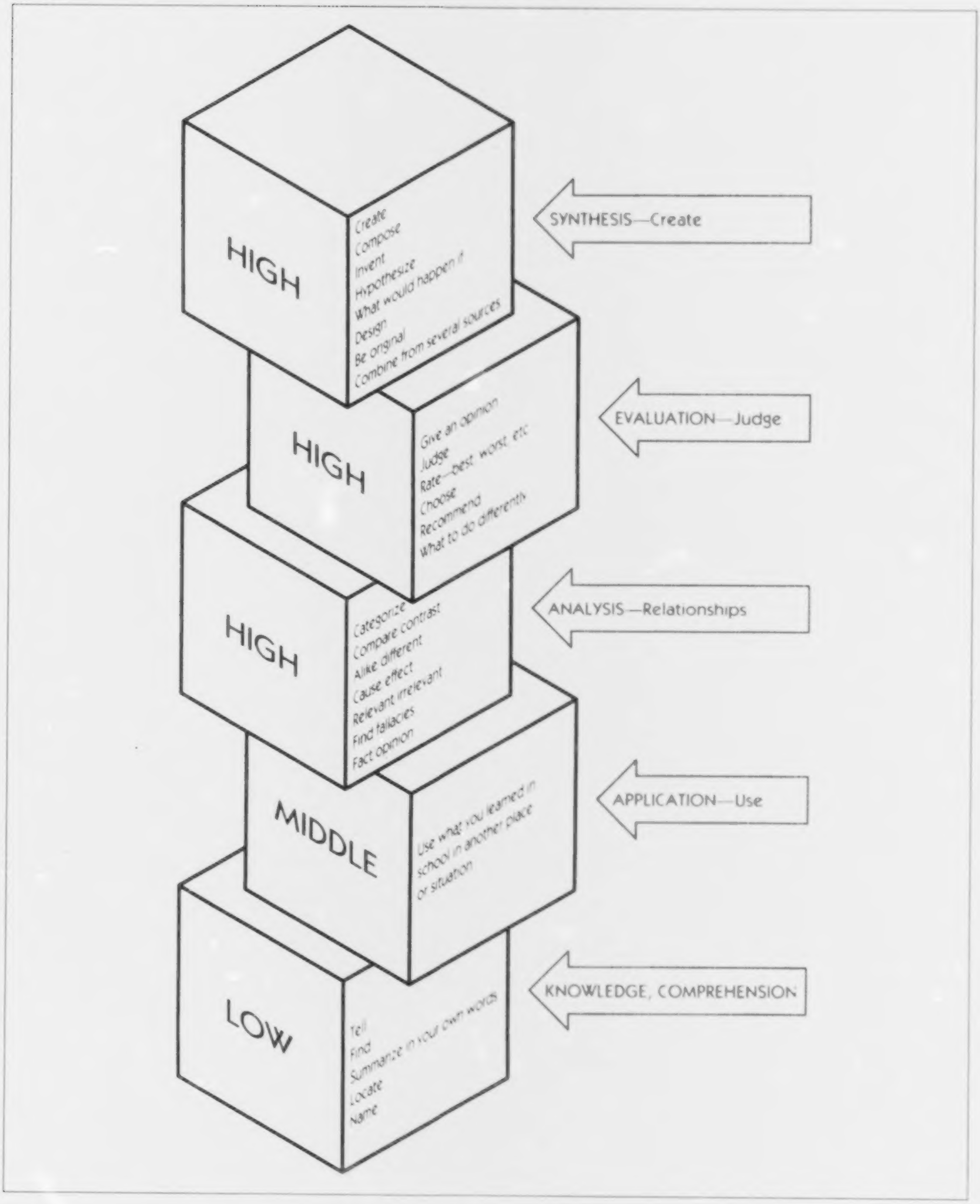
Students can use Bloom's Taxonomy to:

- design questions which involve higher-level thinking; for example:
  - in a co-operative group, design a review quiz on a unit of study which is exchanged for completion with another group
  - develop a list of personal questions they have about a new unit of study
  - write questions that occur to them as they read a novel in their response journals
  - use the Bloom's Taxonomy model on the previous page to create questions for teachers to use for discussions or tests — once students have learned the language of the taxonomy, they can create a certain number of questions by category

- direct independent projects; for example:
  - a pair develops a learning centre for the class based on a unit of study using Bloom's taxonomy — other students use the centre for enrichment
  - a student develops research questions for independent study and proposes a product to demonstrate learning

- demonstrate learning; for example:
  - at a student-led conference, share examples of learning reflected at different levels.

Build Blocks to Think[88]


HIGH
Create
Compose
Invent
Hypothesize
What would happen if
Design
Be original
Combine from several sources
SYNTHESIS—Create
HIGH
Give an opinion
Judge
Rate—best, worst, etc
Choose
Recommend
What to do differently
EVALUATION—Judge
HIGH
Categorize
Compare contrast
Alike different
Cause effect
Relevant irrelevant
Find fallacies
Fact opinion
ANALYSIS—Relationships
MIDDLE
Use what you learned in school in another place or situation
APPLICATION—Use
LOW
Tell
Find
Summarize in your own words
Locate
Name
KNOWLEDGE, COMPREHENSION

The taxonomy, in the form of a reference list of process verbs and possible products linked with each level of thinking, helps teachers to:

- refine oral questioning by purposefully developing a short list of questions for a particular lesson
- design written assignments or questions that involve students in all levels of thinking
- consider suggesting different products for students, allowing for the element of choice.

Using verbs at various levels can help teachers prepare questions which will take students to higher levels of thinking. Select a verb from a level to create a question or activity for students. Direction for a product may be included or may be left to students' choice. Some teachers post Bloom's Taxonomy and several verbs from each level to serve as prompts when asking questions.

Process Verbs[89]

1. Knowledge

Process Verbs

ask
count
define
describe
draw
fill in
find
identify
indicate
label
list
listen
match
memorize
name
observe
pick
point
quote
read
recall
recite
recognize
record
select
show
tabulate
trace
underline
write

Products

fact chart
map
memorize information
read a book
recite a poem
timeline
worksheet

2. Comprehension

Process Verbs

associate
change
compare
contrast
define
differentiate
discuss
distinguish
expand
extend
locate
match
outline
paraphrase
reorganize
restate
reword
translate

Products

choral reading
cross-classification chart
demonstrate
illustrate story
interpret
picture story
retell story
teach lesson
translate

3. Application

Process Verbs

apply
chart
code
collect
construct
demonstrate
dramatize
examine
experiment
graph
group
illustrate
interview
manipulate
model
organize
paint
plan
practise
record
report
simulate
sketch
solve
track
use

Products

collage
collection
construction
diagram
diary
diorama
display
illustration
map
mobile
model
photographs
picture
poster
puzzle
scrapbook
sculpture
skit
stitchery

4. Analysis

Process Verbs

analyze
categorize
classify
correlate
diagram
discover
dissect
divide
examine
explain
group
inspect
interpret
memorize
order (seriate)
relate
research
search
separate
simplify
sort
survey
uncover

Products

cartoons
chart
commercial
contract
crossword puzzle
diagram
fact file
family graph
questionnaire
report
secret code
survey
tree diagram

5. Synthesis

Process Verbs

adapt
advertise
blend
change
combine
compose
create
design
develop
devise
estimate
form
formulate
imagine
infer
invent
modify
originate
predict
prepare
prescribe
produce
role play
suppose
transform

Products

abstract
advertisement
comic strip
conversation
dance
game
invention
magazine
mural
news article
pantomime
play
poem
puppet show
recipe
song
story
structure
TV/radio show
toy
treasure hunt

6. Evaluation

Process Verbs

appraise
assess
award
choose
conclude
consider
criticize
critique
debate
decide
defend
determine
dispute
editorialize
evaluate
grade
judge
justify
measure
prove
rank
recommend
select
test

Products

court trial
debate
discussion
editorial
essay
letter
panel
recommendation
research paper
self-evaluation
survey

Questioning is at the heart of all work in a classroom. In the following chart of questioning samples, notice that students of all ages may be encouraged to think at different levels. Also note the strong link between questioning and product.

Sample Questions/Activities Developed Using Bloom's Taxonomy

	Primary Birds of Prey	Junior Flight	Senior Women in Society
Knowledge recalling or recognizing information from memory	Describe the beak of a bird of prey. What are the names of birds of prey we have studied?	Identify the important elements of wing design that we have discussed.	Describe the role of women in ancient Greece . . . in medieval Europe . . . during World War II . . .
Comprehension understanding meaning, changing information from one form to another, discovering relationships	Outline how birds of prey use camouflage to survive. Compare the beaks of the owl and eagle.	Restate what you know about wing design of paper airplanes while looking at a 747.	Outline some of the changes that have taken place in women's roles across the centuries.
Application using learning or information in new situations	Make a chart of a bird's environment, its family life and food.	Construct many paper airplanes. Record the effect of changes in wings.	Interview a woman from a different era in a role play.
Analysis separating information into basic parts so that its organizational structure can be understood: identifying elements and relationships	Classify these birds of prey by their hunting methods.	If we look at a diagram of a bird and a plane, what parts are related?	Correlate a famous woman with the values and era she lived in. What factors ensured her place in history?
Synthesis combining parts into new or original pattern: involves creativity	If we were to write a factual book on birds of prey, what information would be important to include? Design a table of contents for a book like this.	Design an aircraft of the future. Create a prospectus outlining the benefits, uses and superior features of this aircraft.	What impact might media/advertising have on the perceived roles of women today? Transform a present day TV commercial by infusing new values.
Evaluation judging whether or not something is acceptable or unacceptable according to definite standards	If you were a small animal, which bird of prey would you think the fiercest? Why?	Judge the entries in order to award a research grant. What criteria would you use? Judge the designs and defend your selection.	If you were to write a letter to the editor on the issue of all-girl schooling, what view would you take and how would you support your view?

Creative Thinking

Students who are gifted often demonstrate original ideas, seeing endless possibilities. They like to play with words, experiment with ideas and hunches, and are fluent in generating and elaborating upon ideas.

Creativity is described as using one's resources to develop a novel, fresh solution to a particular problem. Creativity can be cultivated in everyone and can be taught directly. Students can develop their creative will, creative productivity and creative living to a higher level through opportunity, example and encouragement. However, there are always substantial differences in the degree to which students' creative potential is affected by direct instruction in creative thinking. Some students take longer to respond to open-ended instructional activities. Teachers should be prepared for these differences and be more attentive to students who are less receptive.

Nurturing Creativity

Some teaching strategies are conducive to providing opportunities for students to exercise and extend their creative thinking skills — their ingenuity, originality and insightfulness. The following are examples of activities for stimulating students' creative thought processes in the areas of fluency, flexibility, originality and elaboration.[90]

Models	
Marland	✓
Renzulli	✓
Gardner	✓
Sternberg	✓
Treffinger	✓
Gagné	✓
Stanley	
Feldhusen	✓
Betts	✓

Fluency (generating a number of ideas or answers)
- Brainstorm a variety of ways to prevent traffic jams.
- List all the situations where a teaspoon might be useful.
- What might happen if elves stole everyone's buttons?
- List as many as possible: blue items, toys, round items, things that smell good, things that taste bad.

Flexibility (classifying, moving to contrasting categories)
- How many different ways might you classify the contents of your bedroom?
- Combine the features of a wristwatch with those of an electric toothbrush. Describe the new gadget.
- How might a teenager's life be affected if there were no telephones?

Originality (a unique, one-of-a-kind response)
- From a brainstormed list of birds, choose the one that is most unusual.
- Think of unusual uses for a sheet of paper, a milk carton.

Elaboration (adding great detail)
- Describe a hummingbird as it drinks from a tiger lily.
- Draw a cross-section (cut-away) of a medieval castle.
- Sketch a decorated wedding cake.

SCAMPER

Another way to enhance creative thinking is the SCAMPER approach. The seven steps are outlined below. To implement the strategy, think about a topic of concern and ask, "To create a unique solution, what might I . . ."

Substitute, **s**implify, **s**ubtract: other materials, make it streamlined, take away parts, other power sources, make it easier, reduce in number, other approaches, make it more natural, change one part, other ingredients, other processes, other people, other places

Combine: ideas, uses, purposes

Adapt: other parts, ingredients, motion, colour, flavour, functions, sounds, textures

Magnify, **m**odify, **m**inimize: make it bigger, make it smaller, condense, make multi-coloured, make lower, add time, add sound, make it lighter, make it a stronger odour, understate, make it a higher form, exaggerate its shape, make some parts bigger or thicker or stronger

Put to other uses: new ways to use, other uses if modified, other places to use, other people to reach

Eliminate: minify, condense, lower, shorter, lighter, omit, split up

Rearrange: interchange parts, other patterns, other layouts, other sequences, change pace, change schedule, reverse, transpose cause and effect, opposites, turn it backwards, reverse roles, turn it upside down.

For more information on this strategy, see *SCAMPER: Games for Imagination Development* (1971) by R. F. Eberle, Buffalo, NY: D.O.K. Publishers or *Scamper On* (1981) also by R. F. Eberle, Buffalo, NY: D.O.K. Publishers.

For example, if the topic were Animals of the Arctic, in what ways might we:

Substitute, simplify, subtract — the voice of the raven for the howl of a wolf . . . how would the raven feel about this?

Combine — the head of a musk ox with the body of a whale . . . give your new creature a name.

Adapt — your backyard so that a polar bear might spend a weekend there.

Magnify, modify, minimize — the diet of a wolf to make it strictly vegetarian.

Put to other uses — the tail of an Arctic hare.

Eliminate — mice from an owl's diet . . . what would it eat instead?

Rearrange — a penguin's colour scheme to make him less formal.

Creative Problem Solving (CPS)

A more complex form of creative thinking, now widely taught to students who are gifted, is creative problem solving — "a process . . . for approaching a problem in an imaginative way . . . resulting in effective action" (Noller, 1977).

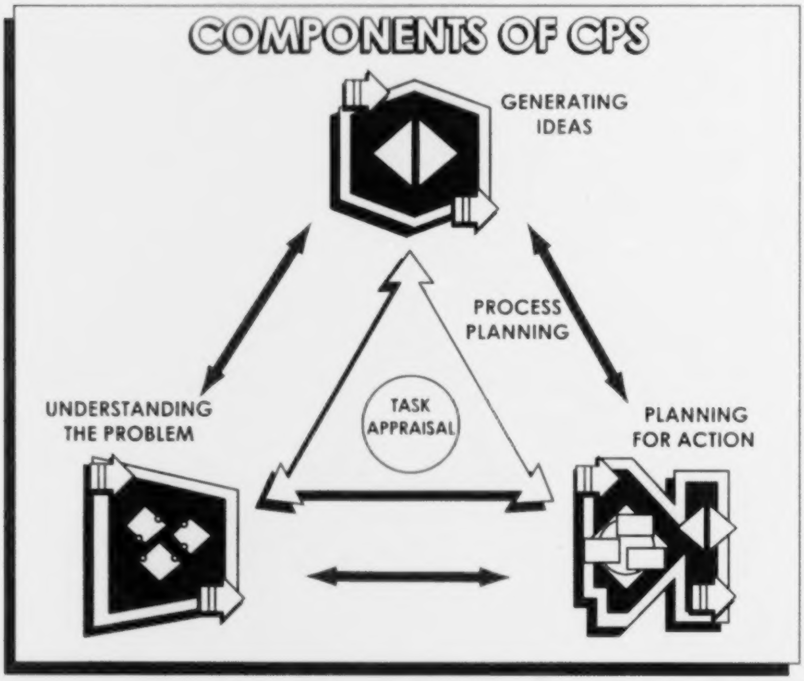
Models	
Marland	✓
Renzulli	✓
Gardner	
Sternberg	✓
Treffinger	✓
Gagné	✓
Stanley	
Feldhusen	
Betts	✓

The CPS model (Treffinger, Isaksen & Dorval, 1994) has grown and changed as a result of outcomes of recent research and through feedback from numerous effective creative problem solvers who have used it in dealing with real problems.

The three major components and the six specific stages of CPS can be described as follows:

I. Understanding the Problem
    1. Mess finding
    2. Data finding
    3. Problem finding
II. Generating Ideas
    4. Idea finding
III. Planning for Action
    5. Solution finding
    6. Acceptance finding.

It is not always necessary to use all three components or all six stages of the model. The visual is a reminder that the components of CPS can be applied without adhering to a fixed or prescriptive lock-step sequence.[91]


COMPONENTS OF CPS
GENERATING IDEAS
PROCESS PLANNING
TASK APPRAISAL
UNDERSTANDING THE PROBLEM
PLANNING FOR ACTION

A more detailed description of each step provides a guided tour of the process. With experience in using the model, teacher-facilitators will decide when a step can be eliminated. It will also become clear that each component encompasses both divergent and convergent thinking

I. Understanding the Problem

1. **Mess finding**

   Mess finding involves exploring the situation to probe interests, experiences and concerns. A number of general topics present the "mess." If the mess situation does not present specific information, the following questions may enhance exploration.

   - Focusing questions:
     What situation demands attention?
     What challenges are presented?

   - Clarifying questions:
     Give me a specific example of . . . ?
     What do you mean by . . . ?

- Converging questions:
  What concerns are most important?

This step is eliminated when specific data about a general topic is presented.

2. **Data finding**

   Data finding is the enumeration of known facts about the situation. When an article, chapter or other written material is provided, the information contained becomes the data. Otherwise, experience and knowledge provide the data. Data finding clarifies the situation through the listing of all that is known or should be known. Focusing questions must be asked. Extending questions are asked when appropriate.

   - Focusing questions:
     What are some things we know about the situation?
     From our readings (or experience, or discussion) what do we know about . . .?
   - Extending questions:
     What are some things we would like to know about the situation?
     How might we find out some of the unknowns?
     How might we learn more about the situation?
   - Clarifying questions:
     What do you mean by . . .?
     How might I write that?

3. **Problem finding**

   Problem finding requires an analysis and evaluation of the data to identify as many as possible questions or problems suggested by the information. Several problems will be identified. A problem statement or combination of problem statements is developed to express the heart of the situation. The situation is narrowed to a selected major problem that is stated in a solvable form. The choice of the action word (verb) directs the focus of the problem. For example, "In what ways might we **encourage**, or **enforce,** or **eliminate** city bylaws related to pet control?" Some instruction regarding the development of problem statements might be necessary. Focusing on stating, selecting and providing reasoning for the identified problem statement are required steps.

   - Focusing questions:
     Which parts of this situation contain our problem?
     What information identifies our problem?

- Stating the problem:
  How might we clearly state the problem?
  Restate this problem in the "in what ways might we . . ." format.

- Selecting a problem:
  Which of these is the best statement of the problem?

- Providing reasoning:
  Why do you think that is the best statement?
  Why is this the best problem statement?

II. Generating Ideas

4. Idea finding

Idea finding searches for as many possible or alternative ideas to serve as solutions to the identified problem statement. Brainstorming and SCAMPER are effective means for listing a variety of solutions, extending the possibilities. Prior to this step, a review of these processes is helpful.

- Focusing questions:
  In what ways might we solve this problem?

- Extending questions:
  What completely different solutions might we list?
  Which of these might be combined, enlarged, modified?
  Which solutions might be substituted, combined, adapted, modified, magnified, minified, put to another use, eliminated, rearranged?

III. Planning for Action

5. Solution finding

Solution finding provides evaluative criteria to determine which alternatives provide the greatest potential for solving the problem. The ideas are analyzed, and evaluated carefully and systematically. Determined criteria are applied to the most promising solutions. After criteria are determined, they are used to evaluate the solutions. A grid is used to rank each solution according to each identified criterion.

- Focusing questions:
  In what ways might we evaluate these ideas?

- Selecting criteria:
  Which (three to five) of these criteria would be best to judge the ideas?

- Evaluating solutions:
  Using a scale of 1–5 with 1 for terrible and 5 for great, rate the solutions on the criteria.
  Using each of the criteria, rank the five best solutions, with 1 being the least appropriate and 5 being best.

6. **Acceptance finding**
   Acceptance finding is a real-life skill that considers audiences who will accept and resist the ultimate solution. Obstacles, objections and difficulties are analyzed to effect a workable, real-life solution to the problem. At this step, an action plan for implementing the solution is developed.

   - Focusing questions:
     Who might accept our solution? Why?
     Who might reject our solution? Why?
     Of the resistors' and acceptors' concerns, what might we consider important in the implementation of our solution?

   - Planning questions:
     What steps must be taken to implement the solution?
     How might we organize this solution so that it is easily facilitated?

The following sample problem provides a brief overview of how the steps in creative problem solving might play out in a classroom situation. Suppose the topic is "Food, Food, Food."

I. Understanding the Problem

1. Mess finding

   Every day, throughout the world, restaurants throw away a great amount of uneaten food. Public health laws prevent them from reserving or reusing this food, and, for similar reasons, they cannot simply give it away to hungry people.

   Even if it can't be served and eaten, there might be a number of other creative ways to use this discarded food.

   Your challenge in this problem is to consider new and unusual uses for discarded, uneaten food, and to develop a promising solution for this problem.[92]

2. Data-Finding

- What do we know from the article "Food, Food, Food?"
  - Uneaten food is discarded from restaurants.
  - Laws prevent reserving uneaten food.
  - Unused food can not be given to hungry people.
- Conduct research to learn:
  - How many kilograms of food are discarded each month? (Survey at least five restaurants.)
- Determine which categories of food are discarded: e.g., vegetables, fruits, meat/fish, poultry, dairy products, etc. and approximately how much in each category.
- Review public health laws which govern the disposal of food.

3. Problem finding

- Brainstorm: what concerns arise from the above situation?
  - How might restaurants plan more effectively to avoid unused food?
  - How might unused food be preserved for future use?
  - Are public health laws too restrictive?
  - Could many of the unused food items be recycled?
- Identify KEY problem
  - In what ways might unused restaurant food be used?

II. Generating Ideas

4. Idea finding

- Brainstorm: In what ways might unused, uneaten food be recycled?
  - Some typical responses might include:
    - feed it to animals at the zoo
    - feed it to domestic farm animals
    - dump it in a compost box.

III. Planning for Action

5. Solution finding

- Take each of the ideas from Step 4 and through group discussion rate them on a scale: e.g., Excellent (5 points), Superior (4 points), Good (3 points), Fair (2 points), Possible (1 point).

- Consider the following suggested criteria:
    - cost of implementation: e.g., sorting, transporting
    - time required
    - legality of the potential solution
    - any other criterion deemed appropriate.
- Choose the solution with the highest number of points

6. Acceptance finding

- Discuss in small groups:
    - How might the chosen solution be promoted and sold to restaurant owners and other key people involved in the recycling?
- Action to be taken:
    - Brainstorm what has to be done and then decide who will do it: e.g., design posters, advertise on e-mail, purchase appropriate containers to transport discarded food.
- New challenges:
    - resistance from commercial suppliers of animal food products
    - more demand for discarded food than the supply.

For those wishing to explore additional practice problems, consult *Practice Problems for Creative Problem Solving* (2nd edition) (1991), by Donald J. Treffinger, published by Center for Creative Learning, Inc., P.O. Box 14100–N.E. Plaza, Sarasota, Florida, U.S.A., 34278-4100.

Independent Study[93]

Independent study is an individualized learning experience that allows students to select a topic, define problems or questions, gather and analyze information, apply skills and create a product to show what has been learned.

Models	
Marland	✓
Renzulli	✓
Gardner	✓
Sternberg	
Treffinger	✓
Gagné	
Stanley	
Feldhusen	
Betts	✓

Purposes

Although the purposes of independent study can be generalized for all students, individual factors, such as entry-level skills and interests will cause different purposes to be emphasized for different students. The general purposes of independent study include:

- developing self-directedness
- acquiring learning-to-learn skills
- learning to gather, analyze and report information
- stimulating the pursuit of personal interests
- encouraging in-depth understanding of some content areas
- acquiring planning and research skills at advanced levels.

Basics

A successful independent study program is dependent on recognizing and planning for these basic elements:

- student self-selection of what is to be studied
- co-operative teacher-student planning of what will be studied and how it will be shown
- alternative ideas for gathering and processing information
- multiple resources that are readily available
- teacher intervention through formal and informal student-teacher dialogues
- skills integrated into the content area being studied
- time specifically allowed for working and conferencing
- working and storage space
- sharing, feedback and evaluation opportunities
- student recognition for expertise and finished product
- established criteria for success
- advise parents of the independent study project.

Teacher Intervention

Student-teacher interaction is necessary during independent study. The interaction may be a formally structured conference or a casual conversation as the teacher circulates around the room while students are working. The teacher intervenes with the student in order to:

- keep in touch
- help with problem solving
- provide direction
- open up new areas for exploration and production
- give encouragement
- introduce, teach and/or reinforce the needed skill.

Developing an Independent Study Plan

In developing an independent study plan, it is important to consider the following:

- select and delimit a subject or topic
- discuss and brainstorm possible sub-areas and questions to explore about the chosen subject or topic
- formulate key questions or issues to pursue and answer
- develop a commitment to a plan and a time sequence
- locate and use multiple resources
- create a product from the material learned
- share findings from the study with classmates
- evaluate the process, products and use of time from the study
- explore possibilities which could extend the study into new areas of learning.

INDEPENDENT STUDY AND RESEARCH

independent study & RESEARCH

SELECT A TOPIC

QUESTIONS TO ANSWER

ORGANIZE INFORMATION

SOURCES of INFORMATION

SHARE INFORMATION

EVALUATION of STUDY

See Appendix 36, page GT.263 for an Independent Study and Research form.

Determining Topics for Independent Study

Topics can come from a variety of sources:

- a part of the regular curriculum — an independent study of covered wagons as part of the social studies unit "The Westward Movement"
- an extension of the regular curriculum — an independent study of how cities are developed after a study of the industrial revolution
- a personal interest — an independent study related to a hobby, vacation, book or item that the student suggests
- a skill to be developed — an independent study related to satisfying an expressed need, such as learning how to weave
- a problem to be solved — an independent study focused on resolving a student-centered or real-world problem, such as finding out the causes of inflation
- an event observed in the environment — an independent study stimulated by a real or local happening, such as the renovation of a recreational area at the neighbourhood park. See Appendices 37 and 38, pages GT.264–266 for a list of generic project ideas.

TOPIC SUGGESTIONS

STUDENT PROJECTS

GT.264

Student Readiness for Independent Study[94]

A key feature of successful independent study is realizing that students are at varying levels of readiness for independent work and planning accordingly. It may be helpful to envision a continuum from dependence toward independence in helping students plan independent investigations.

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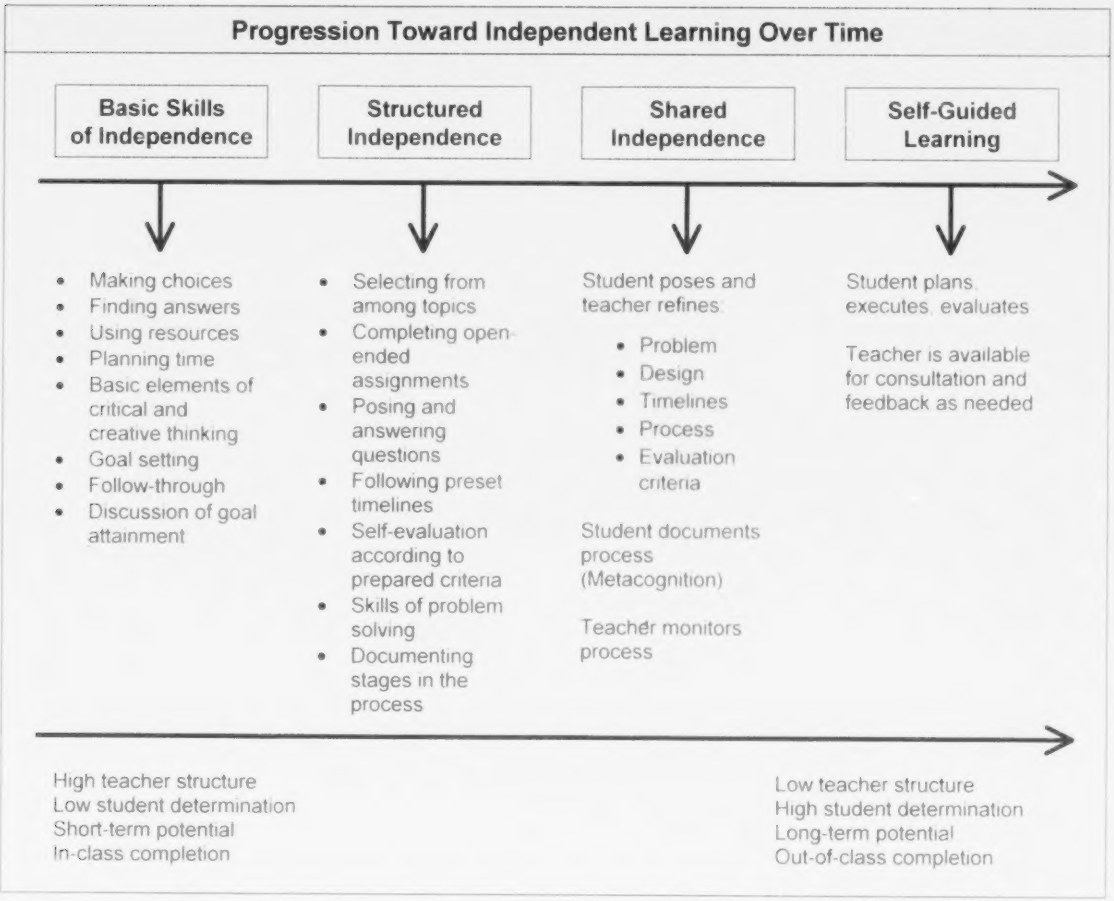


Progression Toward Independent Learning Over Time

Basic Skills of Independence
- Making choices
- Finding answers
- Using resources
- Planning time
- Basic elements of critical and creative thinking
- Goal setting
- Follow-through
- Discussion of goal attainment

Structured Independence
- Selecting from among topics
- Completing open-ended assignments
- Posing and answering questions
- Following preset timelines
- Self-evaluation according to prepared criteria
- Skills of problem solving
- Documenting stages in the process

Shared Independence

Student poses and teacher refines:
- Problem
- Design
- Timelines
- Process
- Evaluation criteria

Student documents process (Metacognition)

Teacher monitors process

Self-Guided Learning

Student plans, executes, evaluates

Teacher is available for consultation and feedback as needed

High teacher structure
Low student determination
Short-term potential
In-class completion

Low teacher structure
High student determination
Long-term potential
Out-of-class completion

Some students are likely to be at a point of development where they require assistance in developing the basic skills of independence. These students may not begin by working with full-fledged independent studies, but rather will be aided by the teacher for a time in learning how to make choices, find information, use resources, plan their time, set and follow through with goals, measure goal attainment, and develop a basic vocabulary and practice of process skills or thinking skills, such as comparison, categorizing, originality, fluency, etc. Such students require high teacher structure and may at first be both more comfortable and successful with a lesser responsibility for designing their own work. They may benefit from short-term assignments that help develop comfort with skills which can facilitate their growth as more independent thinkers and learners, and may reach goals more satisfactorily when in-class time is given for tasks rather than assuming that students are ready for a leap into completing tasks at home.

At the other end of the continuum are students who are ready for self-guided learning. These learners have well-developed skills of inquiry and most likely a strong sense of the contents of a particular field of study. They can pose their own questions for study, plan the study, carry out its steps, adjust plans as changing circumstances dictate and assess the effectiveness of their work. In this instance, little teacher structure is required because students demonstrate high readiness for self-determination. Such students may well remain absorbed in independent studies for long spans of time and may find it both pleasing and necessary to carry out major portions of the study outside of school. For these students, the teacher is primarily a colleague who converses with students about their work, raises questions that may help extend or clarify, and provides feedback (or secures an expert on the topic who can provide authentic feedback) as needed.

In most classes, the majority of students fall somewhere in the centre of the dependence-independence continuum. Some of these students will be ready for structured independence and some for shared independence.

Students in the structured independence category may be comfortable selecting from several proposed tasks designed by the teacher, or they may be ready to complete open-ended assignments in which the teacher establishes parameters for a task, but designs the task so that there are varied ways of completing it. They may be ready to pose key questions which result from previous study and seek answers for their questions, or may be guided by the teacher in doing so. They may be able to follow timelines which delineate points at which various segments of an investigation must be completed and reviewed. They may be comfortable evaluating their work according to criteria predetermined by the teacher, but with student input. They may be able to keep records of what they did at each stage of the project or investigation and describe their progress through the steps of problem solving.

Students ready for shared independence have progressed to a point where they can begin to pose a problem for investigation, design an investigation, establish and generally adhere to timelines for their work, log their thinking processes as they work and measure their effectiveness according to criteria which they delineate. These students, however, still require a teacher who plays an active role in refining the design of the study, responding to work in progress, and assisting students in developing expanding awareness and vocabulary of their habits of work and thought. The teacher and students at this level of readiness collaborate as partners in the design and execution of the independent study.

Many students will be between categories of development at any given time. For example, one student may be quite capable of generating a problem for study and a design for investigating the problem, but may lack skills of adhering to timelines without close teacher supervision. The point is for teachers to have a sense:

- that movement toward independence is developmental
- that there are specific skills which are required in order to develop independence
- that students vary in their readiness to apply certain skills
- of a student's readiness and encourage maximum application of skills by each student at his or her level of readiness.

Suggestions for Successful Independent Study[95]

When students are ready to begin working at a shared independence or self-guiding level, they are ready to design independent studies with reasonably well-developed degrees of student determination and out-of-class long-term investigation potential. The following guidelines ensure greater success in independent study projects and may be modified for the readiness level of the student.

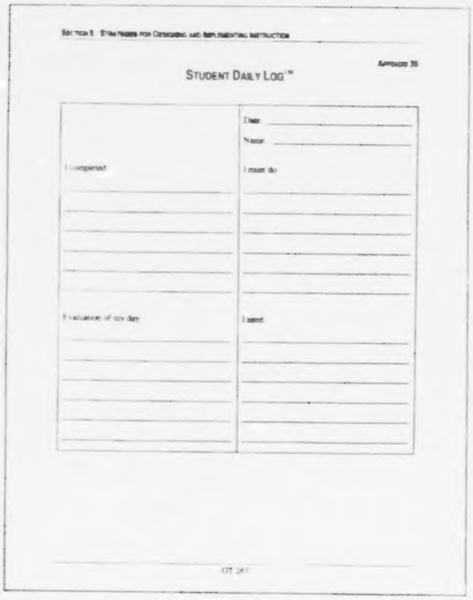
- Have students propose a topic for study which they really care about, as opposed to one which is assigned. This maximizes intrinsic motivation and goes a long way toward ensuring follow through.

- Be sure students read broadly about the topic before they describe the project. This ensures they understand the issues they will be studying if they proceed with the project.

- Help students use a variety of resources for their study, including people and documents, as well as more traditional print sources. Steer clear of encyclopedias whenever possible.

- Have students determine problems or issues which professionals in the field think are important and which those professionals themselves would study. This ensures open-ended pursuits which require thinking and problem solving for students who are likely advanced in their ability to deal with the topic in question.

- Ensure that students develop timelines for completing the whole task as well as components of it. Keeping a simple calendar of the times worked and tasks completed on a given day (initialled by parents if possible) may be useful in helping both students and teacher monitor progress and work habits. Many students at the shared independence level need to have teachers and/or peers critique their work as it progresses to squelch procrastination and monitor quality. For these students, it will be wise to establish check-in dates.



Section 5: Strategies for Designing and Implementing Instruction

Appendix 39

STUDENT DAILY LOG™

	Date: ______ Name: ______
I completed:	I must do:
Evaluation of my day:	I need:

GT.267

- Make sure students keep a process log of what they think and do as they work on their projects. The log may include sketches, photos, journal entries, etc. Such a log not only helps students become more aware of their thinking processes, but also helps teachers understand what transpired in creating a product whose appearance may belie its actual scope. See Appendix 39, page GT.267 for a Student Daily Log form.

- Have students plan from the outset to share their work with an audience which can appreciate and/or learn from what the students create. Students should participate in identifying and securing these audiences, and the audiences may range in size from one to many.

- Help students develop awareness of a range of possible final products, which may necessitate the use of computers, various art forms, various modes of oral communication, ways professionals in a field would present their work, etc. It is also important to see that students learn how to manage these forms appropriately.

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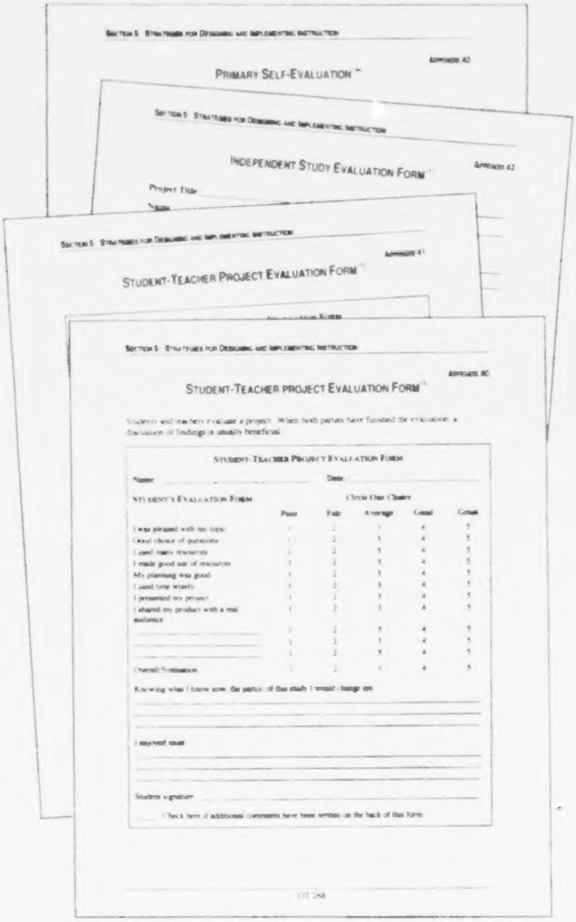

Section 5: Strategies for Designing and Implementing Instruction

Appendix 43

PRIMARY SELF-EVALUATION

Section 5: Strategies for Designing and Implementing Instruction

INDEPENDENT STUDY EVALUATION FORM

Appendix 42

Project Title

Name

Section 5: Strategies for Designing and Implementing Instruction

Appendix 41

STUDENT-TEACHER PROJECT EVALUATION FORM

Section 5: Strategies for Designing and Implementing Instruction

Appendix 40

STUDENT-TEACHER PROJECT EVALUATION FORM

Students and teachers evaluate a project. When both parties have finished the evaluation, a discussion of findings is usually beneficial.

STUDENT-TEACHER PROJECT EVALUATION FORM

Name ______ Date ______

STUDENT'S EVALUATION FORM	Circle One Choice				
	Poor	Fair	Average	Good	Great
I was pleased with my topic	1	2	3	4	5
Good choice of questions	1	2	3	4	5
I used many resources	1	2	3	4	5
I made good use of resources	1	2	3	4	5
My planning was good	1	2	3	4	5
I used time wisely	1	2	3	4	5
I presented my project	1	2	3	4	5
I shared my product with a real audience	1	2	3	4	5
______	1	2	3	4	5
______	1	2	3	4	5
______	1	2	3	4	5
Overall Evaluation	1	2	3	4	5

Knowing what I know now, the parts of this study I would change are ______

I enjoyed most ______

Student signature ______

____ Check here if additional comments have been written on the back of this form.

GT.268

- Have students generate lists to evaluate the product. These lists of criteria should be developed early in the process and modified as necessary (typically with teacher consent) as the project develops. It is often important for the teacher to help students develop or refine these lists. Pre-existing criteria give students a sense of power over their own work and aid the teacher in evaluating final products with less fear of subjectivity. See Appendices 40–43, pages GT.268–271 for sample project evaluation forms.

- Communicate with parents. Be sure parents know what the independent study entails (components, goals, timelines, criteria), your feelings about the importance of skills of independence, what parents can do that is helpful and what they might do that is hurtful in fostering growth toward independence during the duration of the independent study, what to do if they have questions, etc.

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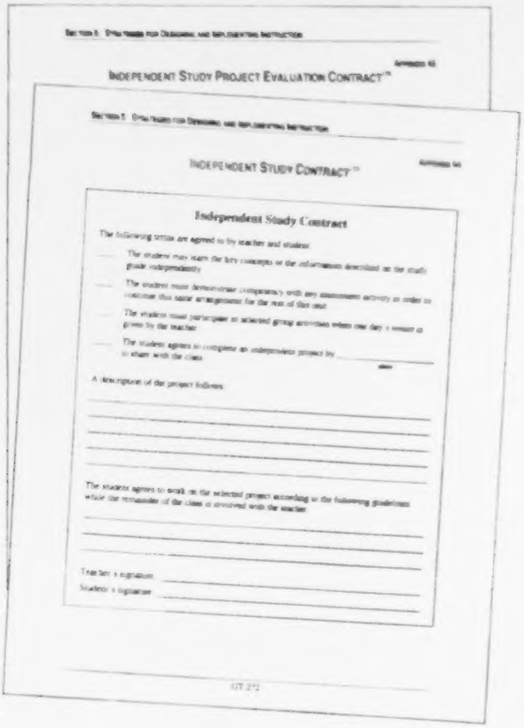

INDEPENDENT STUDY PROJECT EVALUATION CONTRACT

INDEPENDENT STUDY CONTRACT

Independent Study Contract

- If independent projects may be worked on during class, be sure you and the students involved agree:
  - when it is appropriate to work on the independent study
  - where in the classroom/school they may work
  - what materials need to be at school to enable in-class work
  - other ground rules for in-class independent study.

See Appendices 44–45, pages GT.272–273, for a sample independent study contract.

Learning Contracts

A learning contract is an effective tool which teachers may use to guide students in their choice of independent study. Learning contracts allow students to formally pursue an agreed task or interest area. A learning contract between student and teacher should specify the content to be covered, research strategies to be used, resources to be used, products to be achieved and a time span. Learning contracts can provide a way of helping students limit a task and define a product. Learning contracts often are a successful way to stimulate underachieving students who are gifted and talented.[96] A sample learning contract follows on page GT.159. Also see Appendix 46, page GT.274 for a blank learning contract form.

Models	
Marland	✓
Renzulli	✓
Gardner	✓
Sternberg	
Treffinger	✓
Gagné	
Stanley	
Feldhusen	✓
Betts	✓

How to Use a Learning Contract[97]

- Collect enrichment materials that extend concepts taught in the chapter:
  - check the teacher's manual for ideas
  - enlist parents' help to create materials
  - provide answer keys. All materials should be self-correcting.
- Design a master contract for each chapter:
  - in the top third, list the relevant text page numbers or concepts, with check-off spaces
  - in the middle third, list the enrichment options (alternate activities), with spaces for students to record their progress
  - in the bottom third, specify agreed-upon working conditions.
- Make a pre-test or other type of assessment available when each new chapter or unit begins.

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- Correct the assessment activity. Give contracts to students who demonstrate mastery of 80–85 per cent of the planned curriculum.

- Prepare contracts for qualified students:
  - check pages or concepts they have not mastered and others you want them to do
  - tell students they are not allowed to work on the checked items until you teach them to the whole class
  - explain that they will work on alternate enrichment activities when the class is learning things they have already mastered.

- Prepare the middle part of the contract with a menu of enrichment and extension activities:
  - start with one or two options for the first unit; add others cumulatively
  - always include several free-choice options.

- Meet with students on contract as a group:
  - explain contract procedures
  - explain that students may choose from these activities on days when they are excused from participating in a particular lesson
  - demonstrate the new enrichment activity for each unit — students can help each other learn about activities from previous units
  - show students how to keep track of the work they do
  - explain the working conditions listed on the bottom of the contract (some teachers display a working conditions chart in the room instead of having to include them on all contracts).

- Continue to meet with students on contract:
  - plan to meet at least twice a week or more often as necessary
  - work with students to help them develop the skills and independence they need to use enrichment materials
  - get student feedback about the enrichment options.

- Evaluate the work of students on contract:
  - grades should only reflect grade-level work — enrichment work should not be averaged in or students will resist it
  - alternate methods of assessment are perfectly acceptable.

Math Contract[98]

CHAPTER: Fractions

NAME: Julie

✓	PAGE/CONCEPT	✓	PAGE/CONCEPT	✓	PAGE/CONCEPT
	60	✓	64	✓	68
✓	61		65		69
	62	✓	66 - Word Problems	✓	70 - Review (even only)
	63		67	✓	Post-test

ENRICHMENT OPTIONS: Choose tasks about fractions

Special Instructions

Versa-Tiles	
Write Story Problems	✓
Cross Number Puzzles	

YOUR IDEA:

WORKING CONDITIONS

1. No talking to teacher while teacher is teaching
2. When you need help and teacher is busy, ask someone else
3. If no one can help you right away, keep trying yourself or go on to something else
4. If you must go in and out of the room, do it quietly
5. Don't bother anyone else
6. Don't call attention to yourself

Teacher's Signature: ____________ Student's Signature: ____________

Project Planning and Research Skills

Models	
Marland	✓
Renzulli	✓
Gardner	✓
Sternberg	✓
Treffinger	✓
Gagne	
Stanley	
Feldhusen	✓
Betts	✓

Many students who are gifted can generate a wealth of ideas that become the focus of an independent or small group project. However, they may experience difficulties completing a project in a systematic, organized manner. They need to learn how to plan and conduct research in an efficient, effective way.

Beginning as early as Grade 1, students can be encouraged to set personal goals about what they want to find out, what knowledge they want to add to their repertoire, and what organizational and work skills they need to achieve their goals. The result is more likely to be a complete, more sophisticated project.

The following step-by-step guidelines may be useful.

STEP 1

Planning

- Use a mind map to help students explore what they already know. What knowledge have they accumulated about the topic?
  - Define the central topic.
  - List the subheadings needed to explain the topic. (In an essay, these sub-headings would be paragraphs.)

- The student should:
  - conduct some initial research: read books, talk to adults, use the Internet to discover what resources are available
  - skim tables of contents and indexes to look for key words relevant to the topic chosen
  - keep track of ideas gathered. On 3" x 5" cards, create a list of useful resources perused: e.g., title, author, pages or Internet addresses.

- The student should:
  - list sources of information — primary sources (people, objects) and secondary sources (books, articles, Internet material)
  - use a rough notes notebook: devote 2–3 pages in the notebook to each sub-heading*
  - list necessary skills to acquire in order to gain access to these resources: e.g., how to conduct an interview.

* This is a good time to teach note-taking skills and discuss the quality of information sources.

- The student should:
  - write goals and objectives about what he or she wants to find out. The to do list may include:
    "I want to find out about the origins of the sun."
    "At the end of the project I will be able to ______________."
    (The teacher checks the list for relevancy of the objectives to the topic and feasibility of meeting the objectives within the time frame allowed.)

- The student:
  - lists the skills or work processes to be learned in order to complete the task.
    (The teacher may teach such skills as precise writing, writing in one's own words, finding data in a library computerized catalogue or on the Internet. The teacher makes sure that students know how to access community resources, such as public libraries, museums, planetarium, etc.)

- The student:
  - draws up a 4, 5 or 6 week calendar; e.g.,

Week One:	Mind map . . . defining the topic and defining sub-headings
Week Two:	Learning of skills for information gathering
Week Three:	Collection of information . . . writing in your own words
Week Four:	The Rough Draft . . . What does this sentence/paragraph mean? Did I explain my information clearly?
Week Five:	The Final Draft with all pictures and headings. HAND WORK IN ON TIME
Week Six:	Learning the work so it can be presented as an oral presentation.

The student should include in the above planning timetable an individual, weekly meeting with the teacher to go over the progress.

STEP 2

Teaching the Skills for Information Gathering

- Some important skills to teach are:
  - using rough notes
  - avoiding plagiarism
  - keyboarding
  - word processing

  - acknowledging references and sources
  - using charts and graphs
  - conducting phone and person-to-person interviews.

- Teachers need to discuss the relevance of a skill the student needs to acquire and check to see that it has been learned correctly and used appropriately.

- The teacher and student should continuously monitor the time schedule to see if the plan is on track.

STEP 3

Gathering Information

- Reconfirm that the headings give students clearly defined direction about what they want to know. Is relevant information noted under relevant headings? How are these headings linked to make sense of the overall topic?

- The student should discard information sources that do not contribute to these headings.

- The student prepares a glossary of technical words, names and dates to assist other readers of the project and checks spelling of terms.

- The student edits for accuracy of information, unnecessary repetition and sentence syntax.

STEP 4

The First Draft

- From the rough notes and sketches, the student writes the rough draft.

- The student should check to see that the rough draft reads well:
  - "What does this sentence/paragraph mean?"
  - "Is the sentence/paragraph relevant to the headings?"

- The student should check to ensure that references, contents and a glossary (if necessary) are complete and in place:
  - references are listed in a bibliography
  - table of contents comes in front of the text
  - glossary appears after the text.

- The student proof reads for spelling and grammar.

STEP 5

The Final Draft

- The student writes the material for final presentation:
  - checks for neatness
    - larger type headings
    - labelled pictures
    - graphs in place and labelled.
- The student hands the work in on time.

STEP 6

The Oral Presentation

- The student evaluates what he or she has learned and decides what part of that knowledge can be passed on to the rest of the class and/or identifies experts in the field of study. (The teacher prepares a checklist for speaking in front of audiences and generates some speaking activities for students to practise.)
- The student prepares speech notes on 3" x 5" cards:
  - idea highlights
  - memorizes the talk.
- The student:
  - prepares overhead transparencies
  - selects excerpts from CD or visual resources
  - photocopies any materials to be distributed to audience (if presentation is to be an illustrated talk)
  - is attentive to copyright.
- The student rehearses the presentation.
- Enjoy giving the presentation.

STEP 7

Assessment of the Process and Project

- Assessment should be based on:
  - the planning skills acquired by the student
  - key skills and processes that are learned
  - oral presentation
  - final quality of the work.
- Students should submit their:
  - project planning booklet
  - rough notes
  - rough draft
  - final draft.

- The project might be marked out of 100 per cent. The marks for each skill and process should be listed two to three weeks before hand-in time, so students know what has to be covered and completed to obtain top marks. You may change the marking schedule when other skills and processes need to be emphasized.

- A possible marking schedule for a written project follows.

10%	**Front Page** Does the cover page reflect an interesting project? Does it include: name, class, date, title, teacher's name, school?
10%	**Contents, Glossary, References** Do the contents include all headings and graphs? Are the glossary words clearly defined? Are there words in the project that should be in the glossary? Are all references shown clearly at the end?
10%	**Spelling and Grammar** Are all the words spelled correctly? Are sentences simple, follow logical patterns, clear to read and understand?
10%	**In Your Own Words** Have students used their own words? Have students made appropriate rough draft notes and good summaries? Have they plagiarized or referenced all quotes and pictures?
10%	**In on Time** Was each step of the project completed on time, and the final edition handed in on time?
10%	**Interesting Project** Did students obtain interesting information? Is it an improvement from previous work?
10%	**Neat Headings, Diagrams, Pictures** Have students ruled carefully, glued carefully, put things in horizontal? Are headings and pictures in the right order, under the correct headings? Can you read it? Is it legible? Have students used the correct colour pens?
10%	**How Well did They Learn a New Skill?** This is an individual mark, designed for each student and reflects a new skill. The project planning book, note book and rough draft should be checked to see if these skills have been mastered. Have they correctly used new project planning skills and community resources? Have they collected appropriate, original information? Have they edited well used headings systematically and correctly from the mind map? Have they improved a skill since the last project?
20%	**Oral Presentation** Have students prepared for the oral work properly? Are there notes? Have they memorized what they are going to say? Are talk headings prepared on an overhead or written on chart paper? At the start of the talk did they gain the class interest by showing a picture or item? Have they prepared an activity for the class, so they can hear, see, touch, do? Has the speaker remembered to show positive body language while speaking, standing still, standing upright, smiling, using eye contact? Did the speaker speak loudly, slowly and clearly? Did they keep to the time limit? Was it too short or too long? Was the oral presentation easy to comprehend and follow? Was the oral presentation interesting?

Models	
Marland	✓
Renzulli	✓
Gardner	✓
Sternberg	✓
Treffinger	✓
Gagné	
Stanley	
Feldhusen	✓
Betts	✓

Simulations

Simulation is a strategy that invites students to respond as if they were part of the action (or interaction) being simulated. In a simulation, the classroom becomes the base of the theme and the students learn about the topic by taking on roles and becoming immersed in the theme. The simulation becomes a vehicle for allowing students to experience firsthand, topics they would otherwise just read or hear about. Simulations are extremely motivating as students not only take an active role in their learning but actually recreate an event or time in history and watch it unfold in their classroom. A simulation can be as simple as students becoming players on a checker board to becoming Ancient Egyptians living on the Nile, or constructing a museum and creating the artwork to hang on its walls.

Simulations integrate easily into the curriculum, encompassing all subject areas, and develop not only students' academic knowledge but strengthen their emotional development and enhance their global awareness. Simulations are especially successful with gifted and talented students as they allow students to explore a topic in great detail and participate to the full extent of their own ability level.

When selecting a simulation, it is important to select a topic that fits both teacher and student areas of interest. Laying the ground work is the most important step as it determines how much students will buy into the simulation and allows for full growth and development of the simulation. The more authentically the classroom is designed to set the scene for the simulation, the more successful the overall simulation will be. Greeting students on the first day in a theme-appropriate costume and manner is a great kick-off to any simulation. If students feel they are actually a part of the events being discussed, their learning becomes more real and natural, and they understand many more concepts. An excellent resource for simulations is Interaction Publishers, Inc. Address: DBA Interact, #101, 1825 Gillespie Way, El Cajon, CA, 92020-1095; Telephone: (619) 448-1474. They produce teacher-made units that are complete simulations which can be easily used and adapted into any classroom.

The following strategies help make simulations more successful:

- make sure you like the topic, as your enthusiasm ensures that students will buy in
- read through the simulation plans a number of times to ensure that you know where it is going and your best route in getting your students there
- have all the materials prepared prior to the start of the simulation

- break the objectives down into various intelligence or subject areas as it helps you plan your time more effectively
- select student roles and groupings carefully so that students can help each other, but also give students the opportunity to develop their lesser-developed skill areas
- don't be afraid to adjust as you proceed, students will let you know how it is going and what needs to change.

Evaluation of simulations is simple if anecdotal records and observations are kept throughout the course of the unit. Students' work can also be assessed and graded if necessary, and a final unit test can help determine students' overall understanding of what they have experienced. Simulations can be a valuable and fun way of teaching gifted students as long as they are approached with a positive and enthusiastic attitude.

Modification Through Acceleration[90]

Models	
Marland	✓
Renzulli	✓
Gardner	✓
Sternberg	✓
Treffinger	✓
Gagne	✓
Stanley	✓
Feldhusen	✓
Betts	

Acceleration is the practice of providing students with a higher than normal level of instruction commensurate with their learning needs. It occurs when classroom teachers provide students with advanced curriculum, when students skip a grade, or when they take specific courses at higher levels.

Students can be accelerated by grade when they are advanced in all areas, or by subject. In the latter case, a student in Grade 6 may be doing math at an advanced level and language arts at his or her age level.

The following are acceleration programming options:

- continuous progress — students proceed through the curriculum at their own pace
- grade skipping
- content acceleration — content is accelerated by enhancing the degree of abstraction, depth and breadth
- testing out course requirements (pretesting of material to be covered from the prescriptive curriculum to determine a student's need to participate in class lessons — students can be exempted from sections of a course where mastery is demonstrated, allowing time for other learning experiences)
- advanced courses in summer or after school
- correspondence courses
- specifically designed credit courses: e.g., honours English or honours math where content, process and product have been enriched
- advanced placement courses taken in high school which enable the student to acquire a half-course/course credit in the university he or she later attends

- dual enrollment: e.g., may be registered as a Grade 7 student for most subjects, but may also be registered in a high school for a specific subject
- early graduation
- early enrollment in a post-secondary institution
- radical acceleration (provides students with university entrance eligibility two or more years in advance of their chronological peers).

Some acceleration options cited above may be facilitated through the following procedures.

Telescoping[99]

Telescoping is reducing the amount of time students take to cover the curriculum. Courses often involve overlapping content and skills from one grade level to the next. Students who are gifted and talented may not need as much time to learn and remember material. An example of telescoping is when a student completes Grades 8 and 9 math in one year. Telescoping can be used in conjunction with acceleration.

Compacting[99]

Compacting is a strategy designed to streamline the amount of time students spend on the regular curriculum. This strategy allows students to demonstrate what they know, do assignments in those areas where work is needed and then be freed to work on other curricular areas.

Compacting can be used to reduce repetition and buy time for the students to work on individual projects of their own choice.

It may be used to extend work in a given topic. For example, if the area to be compacted is mathematics, students will spend less time on regular classroom assignments and have more time to work on applications or math enrichment activities.

To compact curriculum:

- decide what the student needs to know in the area being considered for compacting
- find out what the student knows — by testing, observing, analyzing performances
- provide assignments so the student can master unknown material
- work with the student in developing an individualized program plan that may include:
  - enrichment in the compacted area
  - enrichment in an area of interest
  - an individual study project.

THE COMPACTOR[100]

The process of compacting can assist in the development of IPPs for students. The Compactor (see below) provides a systematic plan for compacting and streamlining the regular curriculum (Renzulli & Smith, 1978). It is divided into three major sections: curriculum areas to be considered for compacting, procedures for compacting basic material, and acceleration and/or enrichment activities.

INDIVIDUAL EDUCATIONAL PROGRAMMING GUIDE[101]
The Compactor

Prepared by Joseph S. Renzulli
Linda H. Smith

NAME ____ AGE ____ TEACHER(S) ____
SCHOOL ____ GRADE ____ PARENT(S) ____

Individual Conference Dates and Persons Participating in Planning of IPP

CURRICULUM AREAS TO BE CONSIDERED FOR COMPACTING Provide a brief description of basic material to be covered during this marking period and the assessment information or evidence that suggests the need for compacting	PROCEDURES FOR COMPACTING BASIC MATERIAL — Describe activities that will be used to guarantee proficiency in basic curricular areas	ACCELERATION AND/OR ENRICHMENT ACTIVITIES — Describe activities that will be used to provide advanced-level learning experiences in each area of the regular curriculum

☐ Check here if additional information is recorded on the reverse side

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The first column, "curriculum areas to be considered for compacting," should be considered after a comprehensive profile of the student's abilities, interests and learning styles has been prepared. This profile assists in providing assessment information or evidence that suggests a need for compacting in one or more areas of the curriculum. The first column includes the learning objectives for a particular unit of study, followed by assessment information including test scores, behavioural profiles and past academic records.[102]

The second column, "procedures for compacting basic material," involves listing the ways in which proficiency of the regular curriculum can be documented. This column describes the pre-test vehicles teachers select, along with test results. Whenever possible, teachers should make use of diagnostic instruments available in the basic skill areas. These instruments take the form of pre-tests, end-of-unit tests or summary exercises that contain a sampling of major concepts presented in a designated unit of instruction. In cases where such tests or diagnostic instruments are not readily available, review the main objectives of a given unit and construct an instrument using related workbook or textbook exercise items.[102]

The third column, "acceleration and/or enrichment activities," requires making basic decisions about subject-matter boundaries within which enrichment activities will fall. If, for example, several curriculum units in the area of mathematics are compacted, a decision must be made regarding whether the time that has been bought will be devoted to enrichment or acceleration in this area of the curriculum. Although practical and organizational concerns may place certain restrictions on enrichment alternatives, the crucial consideration in making decisions about advanced-level opportunities should be the interests of students.[102]

INDIVIDUAL EDUCATIONAL PROGRAMMING GUIDE
The Compactor

Prepared by: Joseph S. Renzulli
Linda H. Smith

NAME Abigail AGE 9 TEACHER(S) Mrs. Green
SCHOOL Swallow Hills GRADE 4 PARENT(S)

Individual Conference Dates and Persons Participating in Planning of IPP

CURRICULUM AREAS TO BE CONSIDERED FOR COMPACTING — Provide a brief description of basic material to be covered during this marking period and the assessment information or evidence that suggests the need for compacting.	PROCEDURES FOR COMPACTING BASIC MATERIAL — Describe activities that will be used to guarantee proficiency in basic curricular areas.	ACCELERATION AND/OR ENRICHMENT ACTIVITIES — Describe activities that will be used to provide advanced-level learning experiences in each area of the regular curriculum.
Novel study: • constructing meaning • predicting events • character development • defending opinions Abigail has an A to A+ average in language arts. She reads 1-2 novels per week. Her analysis and discussion skills are outstanding.	• interview Abigail to discuss a novel recently read • CTBS . . . . 95%ile • review response journal entries for "Roll of Thunder, Hear My Cry" • tape a small group discussion where Abigail served as group leader	• take excerpts from a novel and script them for theatre/dramatic performance. Cast the play . . . block the stage for each scene . . . stage the play. OR • gather data to write a biography of a community leader, a local artist, musician. Write the person's story.

SUGGESTIONS FOR IMPLEMENTING CURRICULUM COMPACTING[103]

- Start the compacting process by targeting a small group of students for whom compacting seems especially appropriate. Learning how to locate available pretests, identify strengths, modify curriculum, and replace with interesting and challenging alternatives takes time and effort. Starting with two or three students who obviously require the service makes the process easier.

- Select one content area in which:
  - the targeted student has demonstrated previous mastery or curriculum strengths
  - the most resources are available to pretest for prior mastery, and enrich and accelerate the content.

- Try different methods of pretesting or assessment. Ask for assistance from other faculty members, aides or volunteers.

  Many different methods can be used to assess previous mastery of skills or the potential of students to move through content at a more rapid pace. Objective-referenced assessments can be used for all students. Alternative assessment techniques (essays, portfolios, students' products) can also be used to demonstrate proficiency and content expertise.

- Compact by unit, chapter or topic rather than time (marking period or quarter).

- Decide how to document compacted material and define proficiency based on staff consensus and district policy.

  Either the Compactor or a locally designed alternative form can be used to document the compacting process. Various strategies may be used to measure and determine what constitutes proficiency in a content area. A frequently used strategy for measuring proficiency includes the use of unit, chapter and review tests. Other strategies include outlining, reading comprehension questions, reinforcement dittos, check-up pages, weekly tests with the class, teacher-selected problems, co-operative learning and individual work at the board with the teacher. Teachers usually identify a specific proficiency standard by which to evaluate whether students have mastered the regular curriculum. The criteria for determining proficiency tends to range from 80–100 per cent.

- Request help from all available resources in order to create a wide range of opportunities and alternatives to replace content that has been eliminated through compacting. Teachers primarily use two categories of instructional strategies: enrichment and acceleration.

  The following list includes examples of enrichment activities.

Enrichment Strategies

- Math puzzles, word problems
- Projects
- Free reading
- Computer time/games
- Creative games
- Critical thinking activities
- Crossword puzzles
- Individualized kits
- Field trips
- More challenging words
- Research
- Utilization of reference materials
- Creative thinking activities
- Practice in research skills
- Reports
- Game creation
- Entering games/contests
- Learning centres
- Public speaking
- Bulletin boards
- Journal keeping
- Science experiments
- Mentor-guided investigation

- Keep trying, reflecting on what has worked and field testing new ideas.

  The compacting process becomes easier as it evolves into more than just a series of testing and record-keeping exercises. When teachers have used compacting for awhile, it becomes an acceptable alternative and a new way of thinking about learners and the grade-level curriculum. To achieve this kind of success with the process, organization and task commitment become crucial.

See Appendix 47, page GT.275 for a blank compactor form. A thorough presentation of compacting with lists of resources and places to obtain them is presented in *Curriculum Compacting: The Complete Guide to Modifying the Regular Curriculum for High Ability Students* (1992) by S. M. Reis, D. E. Burns & J. S. Renzulli.

Tiered Assignments

Tiered assignments are designed to meet the needs of students functioning at a range of levels. Students work on the same content, but are asked different questions and provided with different activities assigned according to ability.[104] Tiered assignments can be written by teachers using one generative question based on the provincial curriculum.[105] Teachers can create tiered assignments by including expectations, tasks and expected learner outcomes that can accommodate a variety of learning needs and styles. Tiers can then be constructed to accommodate students who are gifted and talented.

The information included in a student profile can help teachers ensure that each student's needs are being met within a tier. A student profile includes information about the student's academic achievement, learning styles and strengths, interests, special abilities and visions, and goals for the future. For more information about student profiles, see pages GT.63–64.

In developing tiered assignments, teachers can use Gardner's Multiple Intelligences, pages GT.24–27 and/or Bloom's Taxonomy, pages GT.133–139 to accommodate individual student needs and strengths within each tier.

Tiered assignments provide students who are gifted and talented with choice and the opportunity to:

- engage in higher-level thinking skills
- generate ideas
- reflect on their own cognition
- engage in activities that are innovative, complex and enriching
- facilitate an awareness of their cognitive and affective needs
- pursue areas of interest.

The following is an example of a tiered assignment. For this assignment, students are identified as challenged, intermediate, and gifted and talented. These three learner profiles are by no means the only tiers that can be created. Tiers should be created based on the needs of the individual students.

Grade Seven
Subject: Social Studies — People and Their Culture
Topic B — Cultural Transition: A Case Study of Japan

The intent of this unit is to help students understand cultural transition. Students will study the changes that have occurred in Japanese culture in the past century. The major generalization that students will make is that cultural transition occurs as a result of internal and external influences.

ISSUES AND QUESTIONS FOR INQUIRY

These focus questions can guide the thinking and discussion that ensue from this assignment.

- How does culture change?
- To what extent should change within a culture be encouraged?
- What changes have taken place in Japanese culture?
- What influences cultures to change?
- What aspects of traditional Japanese culture have been retained?
- What impact has contact with other societies had on Japanese culture?
- How do people respond to cultural change?
- What influences has Japanese culture had on your culture?

The following tiered assignment is designed to accommodate three types of learners:

- Challenged learners — students who can access the curriculum but require modified instruction
- Intermediate learners — students who are capable of understanding and achieving the objectives as set by the provincial curriculum
- Gifted and talented — students who demonstrate exceptional potential and/or performance across wide range of abilities.

The assignment would then be tiered as follows.

GENERATIVE QUESTION

What happens to a society when external and internal influences bring about change to their economic, political and social principles and systems?

TIER ONE (CHALLENGED LEARNER)

Together, students and teachers (using the information presented by the teacher and in the textbook) will:

- review the teacher-directed information relating to Japan and its culture in the past century
- review and list together (on the board) what influences have brought about change to the Japanese culture
- brainstorm together what positives, negatives and interesting facts have emerged as a result of the change.

Product

Students are required to copy the list of influences and list the positives, negatives and interesting facts that come from the brainstorming sessions.

TIER TWO (INTERMEDIATE LEARNER)

Using information presented by the teacher, information in the textbook, as well as information they acquire from other sources (Internet, other textbooks, interviews, etc.), students create a list of the positives, negatives and interesting factors related to cultural change within Japanese society.

Product (Student's Choice)

- collage
- written submission
- oral presentation.

TIER THREE (GIFTED AND TALENTED)

Based on the knowledge and understanding students have about the changing nature of Japanese culture, they will debate the following resolution:

> "That cultural change in Japanese society is a desirable consequence."

Because these students require an understanding of debating, this unit might be interdisciplinary with debating skills taught by the language arts teacher.

Product

Students will debate the issue to the entire class.

Guidelines for Developing Unit-based Curricula

A unit is a comprehensive delineation of activities related to a specific subject, topic or theme indicating the breadth of learning opportunities and the sequential development of learning (Kaplan, 1974). The emphasis in a unit approach is on providing systematic, comprehensive, pre-planned programming.

The unit approach presents the fundamental concepts of the discipline in a manner appropriate to the given population, permitting interaction with the concepts at increasing levels of complexity and sophistication as the student matures. The unit approach provides the benefits of continuity, flexibility, and adaptability to student interests, learning styles and abilities.

General Considerations

- Choices are included, considering the variety of students' interests, learning styles and abilities.
- Students are encouraged to become more autonomous learners.
- Material is unbiased, non-sexist, non-racist and non-elitist.
- One or more models and/or strategies is employed to give structure to overall enrichment design: e.g.,
    Bloom's taxonomy
    Creative problem solving
    Creative thinking
    Self-directed learning.

- Opportunities are provided for development of student's self-awareness and self-concept.

- Respect for individuality is emphasized, and originality and non-conformity are encouraged.

Specific Considerations

The three basic components of a unit approach to planning follow.

CONTENT:

Content refers to the material to be taught or the knowledge that is constructed in a learning experience. The mandated curriculum identifies a body of information that must be considered in each discipline. Prior to any formal teaching, some gifted students are able to demonstrate mastery of certain aspects of prescribed content. Teachers should select those knowledge components that must be introduced or further reinforced.

Frequently, the mandated curriculum is enhanced through additional material stemming from student interests.

Regardless of the source, content encompasses:

- facts
- concepts (categories for objects and events)

- principles (laws that describe some regularity in the external events occurring in the natural world)
- values (concepts that involve a person's feelings)
- attitudes (expression of feelings or desires about some person, place or object).

In unit design:

- content presented is challenging and pertains to a topic of interest, an issue or theme
- content from the mandated curriculum is reinforced and extended
- content may be multidisciplinary
- content from the mandated curriculum may be compacted on the basis of student needs
- content vocabulary is chosen to promote a higher level of language development, allowing students to play with words.

PROCESS

Process encompasses the repertoire of skills that students are expected to acquire as they engage in the curriculum. Programs for the gifted emphasize demonstrated mastery of basic skills and competency in divergent productive thinking operations. Other skills to be introduced include research and information retrieval strategies, time management skills, life skills and skills that facilitate the use of technology.

In unit design:

- basic skills are reinforced and extended
- open-minded, divergent thinking processes are emphasized: e.g., creative thinking, critical thinking, higher-level questioning
- principal emphasis is on process without neglect of acquisition of background information.

PRODUCT

Product refers to the evidence that a student presents to show that understandings are learned and skills acquired. The product may take various formats: e.g., written, oral or visual. See pages GT.59–62 for more information on products.

In unit design:

- the product enables students to respond to the topic in a variety of formats.

Steps in Planning a Unit

The following flowchart illustrates the eight steps in a unit approach to planning.

Steps in Planning a Unit

STEP 1	**Choose a theme**	Choose a broad-based topic, issue or overarching theme which will incorporate many concepts, generalizations, principles and theories. Be aware of how the chosen topic fits into the tapestry of the larger program. How will it capture the imagination and interest of students?
STEP 2	**List learning outcomes**	Check with the Alberta programs of study to ensure that the prescribed general and specific outcomes are included. Extend the list by adding to the outcomes the concepts that are more complex and skills which require higher-order levels of thinking.
STEP 3	**List disciplines/ strands**	Which subjects will be woven into the fabric of the unit? Integration of language arts, science, math, music . . .
STEP 4	**Brainstorm instructional activities**	Develop a web of activities to be undertaken. Include students in brainstorming for ideas. Invite colleagues to contribute their ideas to the web. • Do the activities reflect emphases on higher-level thinking, creative skills, abstract concepts, sophisticated end products? – If the answer is Yes, go to STEP 5. If the answer is No, enrich the quality of the activities to include convergent and divergent thinking involvements; e.g., review Bloom's taxonomy, or creative thinking strategies, or menu of possible end products (see page GT.61).
STEP 5	**Identify resources**	Collaborate/conference with the teacher-librarian to identify relevant resources, both print and non-print. Are there community-based resources that should be accessed?
STEP 6	**Sequence activities**	Decide how the activities should be sequenced to facilitate the efficient, effective acquisition of skills and concepts.
STEP 7	**Outline evaluation strategies**	How will the unit be evaluated? Consider teacher, peer, self and expert evaluation of the various components. How will items for student portfolios be selected?
STEP 8	**Review considerations**	Review general considerations and specific considerations in developing unit-based curricula. Have fun!

Sample Unit Plan

STEP 1 • **Choose a theme**

Broad-based theme: Quality of Life (Grade 9 Social Studies)
Issue: Young Offenders' Act
Concept: Knowledge and understanding of the act as printed
Generalizations: Influence of Young Offenders' Act on society at large: e.g., parents, young people, law enforcement agencies, etc.

STEP 2 • **List learning outcomes**

- Students will write a position paper on the YOA and its contribution/implications for the quality of life
- Students will engage in higher-level thinking skills . . . analysis, synthesis, evaluation
- Students will communicate what they have learned through written and oral modes.

STEP 3 • **List disciplines/strands**

- Social Studies — Topic C Canada Responding to Change Concept: quality of life
- Language arts
- Science

STEP 4 • **Brainstorm instructional activities**

- Information retrieval . . . print and non-print
- Proposal writing
- Editing, proof-reading, polishing for preparation
- Reviewing and introducing questioning strategies
- Debating skills

STEP 5 • **Identify resources**

- Guest speakers
- The *Young Offenders' Act*
- Newspaper, journal articles
- Internet

STEP 6 • **Sequence activities**

- Overview of concept, "quality of life" (brainstorming)
- Perspectives on the *Young Offenders' Act* (guest speakers, newspaper articles, editorials, etc.)
- Write proposals as to how the information gathered will be organized to funnel into a position paper
- Describe format that the final presentation will take: e.g., will the position paper simply be submitted? Presented orally? Simulation?
- Debate on issue

STEP 7 • **Outline evaluation strategies**

- Teacher observation throughout: e.g., task commitment, innovative ideas, effective use of resources, evidence of autonomous learning
- Self-evaluation: e.g., time management, goal achievement
- Peer evaluation: e.g., classmates in judge roles during debate
- Teacher grading of final product

STEP 8 • **Review considerations**

- Topic was relevant, interesting
- Served to enrich, extend the prescriptive curriculum

MENTORSHIPS

The term "mentor" does not imply an internship, apprenticeship or casual hit-or-miss relationship in which the student simply spends time in the presence of an adult and information is transmitted (Boston, 1976). A mentorship is a dynamic shared relationship in which values, attitudes, passions and traditions are passed from one person to another and internalized (Boston, 1976).

Models

Marland	✓
Renzulli	✓
Gardner	✓
Sternberg	✓
Treffinger	✓
Gagné	✓
Stanley	✓
Feldhusen	✓
Betts	✓

Five characteristics distinguish mentoring from other relationships:[106]

- mutual passion for a specific area of interest
- a match of teaching and learning styles
- lifelong trust
- mutual perceptions of symmetry — that is, a movement toward equality in the relationship as the student advances in knowledge and skill
- a sharing of lifestyle as the novice gradually adopts patterns of the mentor.

A successful mentorship program is appropriate for students at all grade levels and is an ideal vehicle to serve the differentiated needs of the gifted because it facilitates the mutual exchange of knowledge in a learning partnership (Harper, 1988).

This section focuses on mentoring as one of the most effective ways to help gifted students actualize their potentials. The decision to set up such arrangements should be made by teachers and parents.

Guidelines for Mentorships

The following guidelines may be useful to parents and educators who wish to explore mentor relationships for gifted students.[107]

- Identify what (not whom) a student needs. The student may want to learn a particular skill or subject, or want someone to offer help in trying out a whole new lifestyle.

- Discuss with the student whether he or she really wants a mentor. Some might just want a pal, advisor or exposure to a career field, rather than a mentor relationship that entails close, prolonged contact and personal growth.

- Identify a few mentor candidates. To identify mentor candidates, use your own circle of friends and their contacts, parents of other gifted students, local schools, local universities, businesses and agencies, professional associations, and local arts groups. If access to local resources is limited, long distance mentors are an option. Internet web sites can be a rich source of potential mentors. For example, Writers in Electronic Residence, or WIER (at wierayorku.ca) is a program that allows public school students across Canada to have their writing evaluated by prominent Canadian authors through computer conferencing.

- Interview the mentors. Find out whether their style of teaching is compatible with the student's learning style, and whether they are excited about their work and want to share their skills. Be explicit about the student's abilities and needs, and about the potential benefits the mentor might derive from working with the young person.
- Match the mentor with the student's talent/interest area. The compatibility of the mentor and student is an important factor in the success of the mentorship. Interest surveys, biographical data, and teaching and learning-style inventories can be helpful in finding partners. Mentor and student need to meet and chat informally before the final decision is made. A visit to the mentor's place of work can also be helpful.[108]
- Prepare the student for the mentorship. Make sure the student understands the purpose of the relationship, its benefits and limitations, and the rights and responsibilities that go along with it. Make sure you understand these as well. Make sure agreements concerning roles are written down for mentor, students, teacher and parent.
- Monitor the mentor relationship. If, after giving the mentorship a fair chance, you feel that the student is not identifying with the mentor, that self-esteem and self-confidence are not being fostered, that common goals are not developing, or that expectations on either side are unrealistic, it might be wise to renegotiate the experience with the student and the mentor. In extreme cases, seek a new mentor.

Questions to Ask Students

- Does the student want a mentor or does the student simply want enrichment in the form of exposure to a particular subject or career field?
- What type of mentor does the student need?
- Is the student prepared to spend a significant amount of time with the mentor?
- Does the student understand the purpose, benefits and limitations to the mentor relationship?

Questions to Ask Mentors

- Does the mentor understand and like working with gifted students?
- Is the mentor's teaching style compatible with the student's learning style?
- Is the mentor willing to be a real role model, sharing the excitement and joy of learning?
- Is the mentor optimistic, with a sense of tomorrow?

Responsibilities

Student Responsibilities

- To be willing to sign a contract with their mentor regarding his or her involvement.
- To be involved for a pre-established period and follow the project through to completion.
- To meet with the mentor at the agreed upon times unless there is a prearranged change.
- To define a specific plan of study with the mentor.
- To communicate with the teacher at periods (either in written form or verbally), outlining activities or plans.
- To immediately communicate any difficulty encountered with the mentorship.
- To make a presentation of the project upon completion of the mentorship.
- To complete an evaluation, if requested, of the program following the mentorship.

Teacher Responsibilities

- To identify students based on student interest, educational need, and the ability to participate in and benefit from the process.
- To help in resolving problems as needed.
- To notify the student of any changes in the student's school performance which would necessitate stopping the mentorship.
- To receive the student's final presentation, evaluate the educational value of the experience and document such on the student's file.

And the more people who engage in intensive talent development, the greater are the possibilities for personal self-actualization and improvement of the human condition.

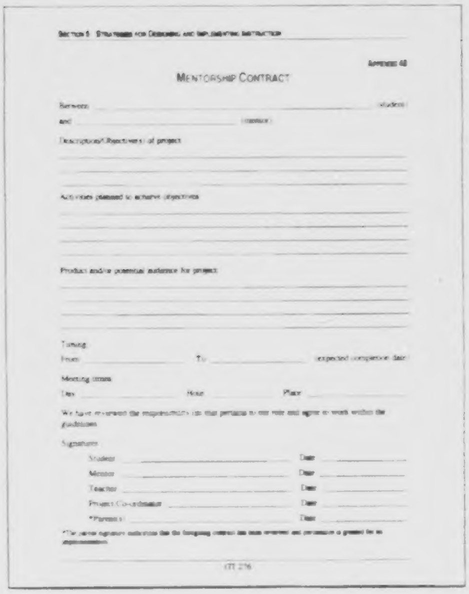
Arnold &
Subotnik, 1995,
pp. 122–123

Parent Responsibilities

- To critically evaluate their children's potential to benefit from a mentoring experience.
- To actively support their children and the mentors in their mentorship relationships.
- To allow their children to sign contracts with their mentors.
- To ensure their children follow through with their commitments.
- To have the children available for all agreed upon meeting times and to notify the mentors in advance of any inability to do so.
- To arrange any transportation during the course of the mentorship.

Mentors model what students can become by showing the lifestyles, modes of thinking, professional practices, costs, and advantages associated with high-level achievement in a particular domain.

Arnold &
Subotnik, 1995,
p. 120



MENTORSHIP CONTRACT

Between ______ (student)
and ______ (mentor)
Description/Objective(s) of project
Activities planned to achieve objectives
Product and/or potential audience for project
Timing:
From ______ To ______ (expected completion date)
Meeting times
Day ______ Hour ______ Place ______
Signatures
Student ______ Date ______
Mentor ______ Date ______
Teacher ______ Date ______
Project Co-ordinator ______ Date ______
*Parent(s) ______ Date ______

GT.276

Mentor Responsibilities

- To develop a relationship with the student where both are thinking, learning and exchanging.
- To help the student explore a field of interest and to aid in developing a realistic perspective of that field through planned, guided experiences.
- To submit to a screening process, realizing that he or she may not be chosen as a mentor for a variety of reasons.
- To be willing to sign a contract with the student after meeting with the student and parents. See Appendix 48, page GT.276.
- To designate a specific amount of time to be devoted to the mentorship and to notify the student of any changes of arrangements agreed upon at the initial meeting.
- To define, with the student, a specific project or plan of study which allows the student to develop an end product.
- To guide the student in independent study.
- To provide and/or suggest related reading materials, field trips or visits giving specific instruction where necessary and outlining costs or equipment required.
- To consider altering the project if problems or concerns arise.
- To communicate with the teacher at periods during the mentorship (either verbally or in written form), to advise of activities and plans.
- To complete an evaluation, if required, of the program following the mentorship period.

Things to Keep in Mind When Setting Up Mentorships[109]

Whether setting up a mentoring program or a single mentorship, attention to several critical factors can mitigate or eliminate later difficulties.

- Individuals responsible for establishing mentorships must determine how many relationships can effectively be managed over a given period of time.

- The developmental level of the student is a major consideration. Some elementary students are ready for a mentorship; some high school students are not.

- Parental permission is an important consideration for any deviation from the normal school routine. This should be gathered in face-to-face contact, along with the return of a signed form.

- Some mentors, though skilled experts in their fields, may be unable or unwilling to handle the critical developmental needs of the student. This is as important for adolescents as for elementary-age children. Success of a mentorship often depends upon attention to developmental needs. Sometimes, double mentoring, where a second mentor (often a teacher) helps the student in areas important to both his or her personal growth and to the success of the mentorship, is advisable. There are several areas in which the second mentor could be particularly effective, including the development of skills for communicating with adults (especially those in power positions), time management, personal reflection on the mentorship and provision of opportunities for students to interact with peers engaged in mentorships (Clasen & Hanson, 1987).

- Mentors must be valued and supported. Their contributions should receive formal recognition from the school. The mentor may need support in learning how to cope with the student in terms of age, cultural background, or attitude and value differences.

- Parents or significant family members may feel threatened by the role of the mentor. As much as possible, they should share in the process by being kept informed, attending occasional meetings, and visiting the mentor and student at mutually agreed-on times.

- Sometimes a mentorship will not work. This may be due to unexpected events or life changes, or because one or both of the partners find the relationship incompatible. This possibility should be dealt with before the mentorship begins. Mentor and student need to know that they are expected to work at the relationship and do all they can to make it succeed, but they also need assurance that they are free to dissolve the mentorship if necessary. In such a case, both should be able to leave the mentorship without assigning blame, but should be able to evaluate what happened.

Sources to Consult for Potential Mentor Contacts

Often teachers know people in their sphere of friends and acquaintances who can be contacted to serve as mentors to students requiring this kind of experience. In some instances, the parent body of the school has individuals willing and able to share specific expertise. If neither of these sources generate an appropriate connection, teachers may wish to consult the yellow pages of their local phone directory under the heading, *Associations, Societies and Foundations*.

PROGRAMMING OPTIONS

Junior Great Books Program

[http://www.greatbooks.org/index.html]
The Junior Great Books Program is a qualitatively different approach to the teaching of literature that is well-suited to gifted readers. The materials, which include selections from outstanding literary works, are appropriate for Grades 2–12. Teachers using the program are expected to enroll in training sessions for leaders of discussion groups.

According the Junior Great Books system, there are three types of questions that a person can ask about a story: factual, evaluative and interpretive. Factual questions can be answered directly from the text. Evaluative questions require readers to draw on their experiences. Interpretive questions, used most often in Junior Great Books, draw on information from the story and readers' intuitive abilities. For gifted students, the program provides opportunities to think divergently and critically, and engage in sophisticated discussions with their intellectual peers.

For more information on the Junior Great Books Program, teachers can access http://www.greatbooks.org/index.html.

Odyssey of the Mind

[http://www.odyssey.org/odyssey/homepage.html]
The Odyssey of the Mind program promotes divergent thinking in students from kindergarten through college. This program offers students a unique opportunity to participate in challenging and motivating activities both inside and outside the regular classroom curriculum. Students learn to work with others as a team. They develop self-confidence by creating solutions to problems provided by the program, evaluating their ideas and making final decisions. They develop their creative skills through problem solving and independent thinking.

To participate in the Odyssey of the Mind program, a school must become a member of the OM Association. For further information contact Odyssey of the Mind, P.O. Box 547, Glasboro, New Jersey, 08028, USA.

Future Problem Solving Program (FPSP)

[http://frostbyte.com/fpsp/toc.html]
The Future Problem Solving Program draws winning teams of students from around the world to compete with one another in solving the problems of the future.

Inspiring and motivating, the educational materials help students learn how to think (not what to think), assisting them in:

- thinking more creatively and enthusiastically
- developing an interactive interest in the future
- improving oral and written communication skills
- solving difficult problems using a six-step process
- working co-operatively with their teammates
- learning about complex societal issues
- developing important research skills
- thinking critically and analytically.

The FPSP aids discovery and development in creative problem-solving skills. The program works effectively and simply. Four-member teams learn and utilize the FPSP six-step process supported by a FPSP coach. The six-step foundation to building dynamic, creative thinking processes includes:

- brainstorming topic-related problems
- identifying an underlying problem
- brainstorming potential solutions to the underlying problem
- developing criteria to judge solutions
- evaluating all solutions to determine the best
- describing the best solution to develop an action plan.

Applying the six steps to three annually determined problem topics, student teams write and mail possible solutions at school-year intervals to FPSP evaluators who provide valuable feedback. Receptive to varying skill levels, FPSP offers competitive and non-competitive programs.

The International Baccalaureate Program (IB)

The International Baccalaureate program is currently offered in 528 participating schools in 78 countries, and in three official languages (English, French and Spanish). It has been adopted by North American high schools as an enrichment program for highly motivated academic students. There are 123 Canadian schools in eight provinces (including Alberta) teaching the IB curricula.

The focus of the IB program is to expand students' thinking beyond provincial and national ideologies, while providing a strong foundation in the knowledge and skills of the subjects taught. In IB courses, students learn how and why, as well as what. Students increase their abilities to assimilate information, analyze data and problem solve, and learn how to manage their resources of time and effort. Having taken the IB program courses, students are better prepared for the rigour of university/college life. They often perform better on regular high school exams and may get advanced placement to universities or colleges.

Most universities in North America and many throughout the world recognize the IB program and grant university entrance based on students' performances on the IB exams. Many universities allow advanced placement or credit on some level courses. However, universities do not have a common recognition policy and students must carefully investigate degree requirements of the post-secondary institutions they wish to attend.

The IB curriculum provides a rigorous two-year pre-university course of study leading to examinations that meet the needs of highly motivated and academically oriented students. It develops the intellectual, social and critical perspectives necessary in the adult world. In content, the IB curriculum is a deliberate compromise between the preference for specialization in some countries and the emphasis on breadth preferred in others. The intent is that students learn how to learn, how to analyze, how to reach considered conclusions about people, their languages and literature, their ways in society and the scientific forces of the environment.

A full candidate must take all the courses covered in the sequence for the six courses required. To receive a full certificate, students must write all the corresponding exams associated with these courses. A partial candidate must do at least two courses and must write the corresponding exams associated with these courses.

IB courses include the curriculum content mandated by Alberta Education and students are required to write the Alberta Diploma Exams.

Advanced Placement Program (AP)

The Advanced Placement program is a challenging academic program which provides an opportunity for bright, motivated high school students to study university-level material, demonstrate mastery of course material by taking an AP exam, and in some cases, gain credit, placement or both at a college or university of their choice. Almost all universities and colleges in the United States and Canada, and many in Europe, take part in the AP program. Because universities do not have a common recognition policy, students must carefully investigate degree requirements of the post-secondary institutions they wish to attend.

To be successful in this rigorous program, students must exhibit certain characteristics. They should have demonstrated intellectual curiosity and commitment to scholarship. Ideally, they should also show a wide interest in the world of ideas and events, and be involved in some extra-curricular or co-curricular activities. Fundamentally, they must excel academically and be highly self-motivated. For particularly self-directed students, an AP program in the form of supervised independent study is a valid option.

Advanced Placement examinations are not written until the Grade 12 year, however, preparatory courses are offered in Grades 10 and 11. AP courses and exams are offered in 18 subject areas. Although AP exams are a significant part of the AP program, they are not the only component. Students can benefit from taking AP courses by: learning a subject in greater depth, developing skills that are critically important to successful post-secondary study, and demonstrating to universities their willingness to undertake a challenging course.

The AP program offers several Advanced Placement Scholar Awards to recognize high school students who have demonstrated college-level achievement through AP courses and exams. Student achievement is acknowledged on high school transcripts.

AP courses include the curriculum content mandated by Alberta Education and students are required to write the Alberta Diploma Exams.

Information about the AP program is available through College Board Online (CBO) on the Internet at [http://www.collegeboard.org].

SECTION 6: POST-MODERNISM AND GIFTED EDUCATION

This section includes an overview of post-modern theory, its impact on current educational practice and its interface possibilities for developing curricula for students who are gifted.

> *We live in a universe that is alive, vibrant, and constantly evolving. Just as the earth is [in] constant motion and transformation, so are we. Take your place in the universal dance, the universal rhythm. Allow change to happen. Sometimes change comes in one smashing moment like a volcanic eruption. Other times it happens more slowly, the way the winds and rain sculpt bridges out of canyons.*
>
> Beattie, 1996, pp. 118–119

A TRANSFORMATION IN WORLDVIEW

Post-modernism is a recreative process. It questions traditional assumptions, unsettles static foundations and thrives on possibilities. The following chart illustrates the shift in thought between the traditional and the transformative world view of theory underlying teaching and learning.

Traditional Worldview	**Transformative Worldview**
• Depends on the Newtonian model of a stable, fixed, ordered universe	• Recognizes the inherent chaos, complexity and indeterminacy of the natural world
• Views knowledge as static, grounded in rational, scientific thought	• Views knowledge as dynamic, recognizing rapid changes in information, and questioning conclusions based on objective, scientific certainty
• Assumes that language has a fixed, universal meaning	• Recognizes language as an open, multi-voiced, interpretive field of play, in which words have multiple meanings
• A closed system: operates in rigid compartments and focuses on closure	• An open-ended, flexible system: strict categories and compartments are blurred

The post-modern worldview:

- thrives on the complexity, spontaneity and indeterminance of the natural world
- acknowledges both chaos and order as fundamental threads within this system
- trusts that increasingly complex patterns emerge out of the seeming disorder.

THE CHANGING FACE OF EDUCATION

> *If we are truly going to create learning communities for the 21st century, we must look differently at our classrooms, our schools and our work. We must view them as dynamic, adaptive, self-organizing systems, not only capable but inherently designed to renew themselves and to grow and change.*
>
> Marshall, 1995
> p. 14

Post-modernism initiates change within the field of education. It is not a destructive process nor a new, radical ideology. Rather, a post-modern vision of education becomes a way of:

- naming the natural, creative flow of classroom interaction
- nurturing the mutual reciprocity in the student-teacher relationship
- valuing a curriculum based on collaboration and negotiation.

Post-modernism is already at work in dynamic classrooms where students are actively engaged in inquiry. Post-modern practice is exemplified by teachers who:

- involve students in the collaborative planning process
- build in opportunities for student choice
- honour individual students' unique voices and visions
- expose the multiple layers of a concept and resist the impulse to impose a fixed, universal meaning
- act as mediators in students' learning, enabling students to make sense of their experiences, make connections and integrate the new with the known.

THE FOUR R'S OF CURRICULUM PLANNING

The following model for curriculum planning (Doll, 1993) emerges from educational theory focused on creating open, dynamic classrooms of the future. It also incorporates many key ideas and assumptions about curriculum theory for students who are gifted.

- **Richness**

  A rich curriculum is:
  - open to many layers of interpretation
  - focused on broad-based issues and themes
  - multi-disciplinary
  - filled with ambiguity and possibility
  - inclusive of diverse perspectives.

  A rich curriculum generates multiple paths of inquiry and discovery. It has many connections to other disciplines and ideas. And, it is open enough to inspire learners to engage in meaningful dialogue about the concepts pursued.

Teacher's Role

- choose broad-based unit topics which are:
    - accessible
    - central to a subject or discipline
    - easily connected to personal context, other subjects and wider, global perspectives
- provide adequate space for student choice within unit
- help students deal with stable as well as complex, tenuous interpretations.

- **Recursion**

  Recursion refers to the process of revisiting a concept, text, idea, topic, assumption or expectation. A curriculum that facilitates recursion thrives on constant, active reflection. The recursive process enables students to:

  - question and reconceptualize their initial ideas and understandings in light of new, additional or contradictory information
  - make connections between ideas
  - develop additional layers of meaning
  - deepen their understanding of a concept
  - chart their own growing, evolving, understanding.

  Teacher's Role

  - Model the recursive process by revisiting a particular topic, text, or concept at various points within the unit, year, across disciplines or across grades.
  - Allow space for interaction and dialogue between students, teachers and texts.
  - Ask students questions which help them to look at old answers in a new way and ensure that students begin to ask these questions of themselves.
  - Set up learning tasks, activities and projects which necessitate revisiting and revising at various points in the unit or year.

- **Relations**

  A relational curriculum:

  - honours multiple voices and interpretations
  - allows main texts, ideas and concepts to be thrown into every combination possible
  - considers central concepts from as many points of view and perspectives as possible.

Teacher's Role

- Resist the tendency to cover a vast amount of content in a short amount of time.
- Play with ideas and concepts.
- Provide time for students to wonder, imagine, consider the possibilities and possible equations.

- **Rigour**

  The rigourous component of a curriculum is perhaps the most crucial. Rigour is:

  - the core that structures the possibilities and problems, and connects the diverse paths of discovery
  - the loose order or pattern underlying the divergent ideas and concepts
  - what enables coherence to emerge from chaos and complexity
  - students' diligent struggles to work through the problems and the discrepancies
  - students' absolute engagement with the material, concepts and most importantly, possibilities
  - what allows for richness.

Teacher's Role

- Develop central unit topics which guide, stabilize and loosely structure student inquiry and discovery.
- Emphasize connections within a student's personal learning path.
- Teach and utilize mind-mapping as a strategy to organize units, visualize connections within a topic, and create coherence and unity within a vast unit of study.

Within the context of curriculum planning, differentiation is essential in challenging gifted students and transforming classrooms into spaces which embrace change, diversity and complexity.

Principles for Building Curriculum Differentiation[110]

Differentiated curriculum should focus on:	Differentiated curricular experiences should provide students with:
Complex content: elaborate, in-depth study of major ideas, problems and themes that integrate knowledge with and across systems of thought	Opportunities to: • explore conflicting ideas and theories of the past, present and future • apply knowledge to multiple levels of understanding and varied situations • acquire and apply basic learnings from the disciplines • explore varied belief systems and value constructs • explore and understand unresolved issues and problems within an area of study • apply knowledge derived from one discipline to new areas of study and investigation
Development and application of productive thinking skills: encouraging students to reconceptualize existing knowledge or generate new knowledge	Opportunities to: • acquire knowledge and develop innovative skills in keeping with criteria set by people with meaningful perspectives on the area of study • develop skills into communication forms appropriate to varied audiences
Exploration of constantly changing world of knowledge and information	Opportunities to: • explore the frontiers of knowledge • acquire varied responses to issues and problems without relinquishing or negating one's own response except on the basis of evidence • develop methods and skills of consensus, compromise and concession for the reconciliation of differences • understand the role perception plays in the analysis and interpretation of issues, and how a personal point of view is developed

BEST COPY AVAILABLE

Selection and use of appropriate and specialized resources	Opportunities to: • identify and use multi-leveled and varied resources appropriate to study • comprehend concepts of data reliability and validity, and distinctions between primary, secondary and tertiary data • acquire and use specific techniques of investigation that are unique to various disciplines • develop skills and understandings needed to use advanced information systems technology • broaden insights into the nature of an appropriate learning environment and that the entire world offers possibilities for learning • develop the procedures and skills needed to identify and employ the services of experts as resources for study
Promotion of self-initiated and self-directed learning and growth	Opportunities to: • develop problem identification skills and explore problems independently • understand the self as learner, developing insights into strengths, weaknesses, interests, styles and preferences • explore capacities and preferences for group as well as individual tasks
Development of self-understanding and the understanding of one's relationship to persons, social institutions, nature and culture	Opportunities to: • develop a personal philosophy of life • participate in and understand appropriate roles of leader and followers • nurture an appreciation of how and what one can contribute to disciplines, people and situations
Evaluations that are conducted in accordance with principles of differentiation: stress higher-level thinking skills, creativity and excellence in performance and products	Opportunities to: • develop an awareness of criteria appropriate to the individual and the nature of the learning experience • develop skills necessary for critiquing one's own performances and products, and those of peers • accept and use critical feedback in a productive manner

POST-MODERN CONNECTIONS TO GIFTED EDUCATION

The concepts and practices advocated in post-modern educational theory are synonymous with learning models and philosophies central to the evolving field of gifted education. Inquiry-based, process-oriented, student-directed learning is at the heart of both post-modernism and emerging models for teaching high-potential students.

The following chart highlights the similarities of the characteristics of students who are gifted and the premises underlying post-modern theory.

CHARACTERISTICS	
Gifted Learners	**Post-Modern Theory**
• are inquisitive and curious	• question old missions and truths
• are makers of meaning	• construct meaning
• welcome new concepts	• welcome change and chaos
• hold multiple perspectives, solutions and explanations	• encompass multiple and complex structures
• are diverse individuals	• embrace diversity
• need relevant and purposeful learning	• provide transformative learning
• are global thinkers	• open the conversation to big issues

Practices such as the following guide post-modern pedagogy and gifted education:

- curriculum compacting
- differentiation
- enrichment
- tiered assignments
- multiple, varied instructional paths
- rich opportunities for individualization and personal extension
- authentic assessment
- collaborative evaluation.

TEACHERS AS MEDIATORS

Teachers assume the role of mediator in the learning process. The traditional telling-listening relationship between teacher and student is replaced by one that is more complex and interactive. Students' own efforts to understand are the centre of education. Attentiveness to students' unique learning processes is essential in order for teachers to know when to support and when to challenge students. Rather than focussing strictly on content delivery, teachers must:

- develop a substantial knowledge base about learning and development in order to recognize what students are thinking and what they are ready to learn
- be attentive to students' spontaneous transformations in thought and understanding to take advantage of reactions and seize teachable moments
- plan collaboratively with students, gaining a sense of students' needs, difficulties, interest and areas requiring growth or extension
- set up active learning tasks that engage students in personally relevant, purposeful work
- spend substantial time moving through the classroom to work with individuals and small groups
- ask students to reflect on their choices, actions and learning; to explain what they did; to share their methodologies and question their assumptions
- guide students to new tasks or resources when they have mastered a concept, are ready to extend themselves or desire to change direction in their path of discovery.

From the teacher's end, it boils down to whether or not she has the gift or the wisdom to listen to another, the ability to draw out and preserve that other's line of thought.

Ashton-Warner, 1986, p. 58

Essentially, teachers must provide learning experiences at two levels:

- students should be independently practising something they have learned
- students should be engaged in discovery learning which challenges them to go beyond attained developmental levels.

Learning is a constant process of integrating new knowledge with what is already known.

As teachers talk about their work and "name" their experiences, they learn about what they know and what they believe. They also learn what they do not know. Such knowledge empowers the individual by providing a source for action that is generated from within rather than imposed from without. Teachers who know in this way can act with intent: they are empowered to draw from the center of their own knowing and act as critics and creators of their world. People who are empowered — teachers in this case — are those who are able to act in accordance with what they know and believe.

Richert, 1992,
pp. 196–197

Reflective Teachers

The goal of constant transformation should guide not only student learning but teacher learning as well. This requires that educators contemplate and question their pedagogical assumptions. A teacher's process of self-inquiry and discovery can be guided by the following questions.

- **Action:** What is my concern in my practice? Decide on an issue in your own teaching that you would like to improve or better understand.
- **Reflections:** What values underlie this issue? Connect your pedagogical concerns to personal, educational philosophies and beliefs, as well as to the needs of your students.
- **Revision:** What am I going to do about it? Map out relevant change you could make in your classroom and teaching.
- **Collaboration**: How might I best involve my students in this project? Encourage student feedback to ensure that your transformative efforts are meeting their needs and facilitating their own learning transformations. Student feedback enables you to see the effects of your changes and helps you confront your assumptions.

Reflective Students

Reflecting on one's ideas, thoughts, actions and practices brings about real understanding and transformative learning. Guiding students to self-understanding and self-knowledge should be at the centre of teaching and learning. It is essential for students to know themselves as learners not only within the classroom, but also as active creators of meaning in the outside world. To facilitate this, teachers should emphasize questioning, interpreting and exploring.

Transformative teaching and learning hinges on teachers and students subscribing to the following beliefs and values.

- Learners are active creators of meaning.
- Learning is subjective:
  - previous understanding becomes the foundation for learning: new knowledge is integrated into existing cognitive structures
  - memory is deeply dependent on what the learner already knows: prior knowledge and personal context are central in all investigations of meaning.

- Internal reorganization occurs as a learner encounters new information. Learning is recognized as a chaotic, disorderly process which thrives on complexity.
- Deep understanding involves making connections between concepts, seeing relationships among ideas; content is personally relevant.
- Instruction focuses on internal processes.
- Learning is transformative: learners move gradually toward greater, deeper understanding, but it is a repetitive process and understanding is constantly evolving.
- Learning is student-centred: learners are self-directed, autonomous and independent.
- Student-teacher relationship is based on mutual respect and democracy.

A PROCESS-ORIENTED CURRICULUM

Curriculum must be developed and delivered in a way that accommodates transformation. Specified topics and general outcomes are the starting point in curriculum conception.

curriculum becomes a process of development rather than a body of knowledge to be covered or learned

Doll, 1989, p. 250

Curriculum:
- is defined by the activity of meaning-making
- is a combination of possibility, potentiality and process
- is an open system rather than a pre-determined destination
- focuses on dialoguing, negotiating and interacting
- emerges as students and teachers interact within the learning community
- is a student's personal process of inquiry and discovery — foundational truths are often questioned or reconceptualized in this personal process.

A process curriculum:
- focuses on students' own processes of dialoguing, negotiating and interacting with teacher, peers and content material
- depends upon the belief that order and meaning require and arise from disorder or chaos
- is creative, spontaneous and transformative.

DEVELOPING GENERATIVE TOPICS

Generative topics are the essential underpinnings of a process curriculum. They are the practical "how" which bring the post-modern transformation of learning, pedagogy and curriculum development into the classroom. Teaching and learning for true understanding rely on topics with limitless depth, various points and levels of entry, diverse perspectives, and multiple connections to other topics and the world. Generative topics naturally lead to inquiry, questions, anomalies and a passionate need for further research.

The following stages outline a teacher's process of choosing and developing a generative topic.

Stage One — Determining Overarching Goals and Themes

Teachers develop broad, overarching goals. These goals are not meant as linear objectives or predetermined, controlling outcomes, rather, they serve to guide inquiry, structure and classroom discourse, and facilitate limitless learning. Such goals are often oriented to particular skills or habits of mind. For example,

- critical thinking skills
- higher-level thinking skills
- recognition of relationships and patterns
- ability to deal with multiple voices and diverse perspectives.

Once identified, it is important to integrate these goals with themes that are central to a unit of study. The following themes (Boyer, 1993) lend themselves well to the development of generative topics:

- respecting the miracle of life — understanding the cycles of life and knowing about birth and death as part of the cycle
- empowering the use of language — understanding the significance of communication through symbolic and visual language, as well as print and oral forms
- appreciating the aesthetic — understanding culture through its arts
- understanding groups and institutions — understanding the web of social existence
- revering the natural world — understanding the ecosystems of the universe
- affirming the dignity of all work — understanding the significance of work of the land as well as work of the mind, and understanding producing and consuming
- guiding values and beliefs — questions of purpose and understanding the purposefulness of others.

Stage Two — Determining Topics

It is then crucial to pinpoint specific topics that accommodate overarching goals. It is often valuable to map a topic, contemplate its many possible extensions and connections to other disciplines, and visualize its various point of entry. Topics with high generative potential:

- are central to the field of inquiry
- are critical to understanding the field and its central questions
- are engaging
- are relevant to individual learners and the world
- are accessible at many levels
- are easily connected to other topics
- are entered from different contexts
- are inherently complex, inconsistent, diverse and have a limitless quality
- inspire further research
- are relevant to other subject areas
- are capable of eliciting critical thinking and questioning.

Topics such as "patterns in math or music" or "personal identity in literature and in life" allow students to enter, explore and make unique connections to other relevant concepts of individual interest.

Stage Three — Valuing the Generative Process

The remainder of curriculum emerges through classroom interaction. It involves a collaborative student-teacher community, and an honouring of student choice and voice. This final level of curriculum is a complex web, acknowledging and thriving on multiple voices, diverse perspectives, intertextual echoes and global connections. The key to a shared, process curriculum is that students constantly reflect on the choices they have made and meanings they have construed.

The following chart identifies principles that are essential in developing a generative curriculum.

PRINCIPLES	TEACHER/STUDENT INVOLVEMENT
Element of student choice	Students help define content — select the particular biography to read or particular play to present.
Individual levels of entry	Students enter topic from unique vantage points and personal planes of experience. They have the opportunity to explore the web of connections and pursue their own paths. Students have time to wonder, work around the edges of subject matter and find a particular direction that interests them.
Indeterminance/delayed intentionality	Students sense that the results of their work are not predetermined or fully predictable. They enjoy a sense of freedom and believe teachers and peers learn something from them.
Sense of discovery	Topics have an unusual quality, or common, familiar concepts are approached and explored in a new way, evoking lingering questions.
Broadened concept of product	Teachers encourage, legitimize and respect different forms of expression and value originality.
Mastery	Students gain some form of expertise in their unique paths of inquiry. They create original and public products to be shared with peers, teachers and other appropriate audiences.
Reflective demonstration of understanding	Students are able to critically discuss their paths of inquiry with a reflective audience who pays attention to the details of their work and provides a thoughtful response to their findings.
Experiential learning	Learning tasks and endeavours are truly authentic and somehow relevant to the world. Students do something, such as participate in political action, write a letter to an editor, work with people who are homeless or develop an exhibition.
Passion	Students and teachers are passionate about the material: the richest activities are those that emerge and evolve out of student interest and invention.

INQUIRY–BASED TEACHING AND LEARNING

A student's path of inquiry should be guided by viable, provocative questions. It is up to teachers not only to pose questions which require original, productive thinking, but more importantly, create a learning climate which inspires risk taking and critical thinking. Teachers need to present material in an open, partial way, to ensure students actively question and contest.

What? vs. So What?

What?

"What" inquiry consists of simple, lower-level questioning (who, what, where). Convergent thinking and single-answer questioning is important for detail mastery, but students must be challenged and challenge themselves to apply, evaluate and synthesize material rather than simply memorize and regurgitate.

So What?

"So what" inquiry is more complex and higher level. Posing the question, "So what?" requires that students take a position, offer a different interpretation or construct an alternative path. Complex, open-ended questioning techniques focus on cause-effect relationships, consequences, connections, and thoughtful analysis and synthesis. Higher-level questions promote critical thinking.

The teacher's role in facilitating inquiry-based learning includes the following.

- Consider the skills that should be focused on for the unit: e.g.,
  - critical thinking skills
  - higher-level thinking skills
  - recognition of relationships and patterns
  - ability to deal with multiple voices and diverse perspectives.
- Establish important themes and concepts.
- Find a way for students to identify with themes and concepts from their own life experiences.
- Search for meaningful national and global perspectives on the same themes or concepts: examine news and media sources, as well as pop culture phenomena.
- Consider the instructional strategies which would best facilitate inquiry-based learning: e.g.,
  - jigsaw strategy
  - creative projects
  - journalling questions to guide discovery
  - consider the ways in which the current topic connects to the next unit of study.

Scaffolding Student Inquiry

The following can be distributed to students to cue and focus their process of inquiry or self-directed study. These guidelines lead students from topic selection and focus, through resource location and interpretation, application and presentation, and self-evaluation of methodology.

Define the need for information.
- What do you need information about?
- Why do you need information?
- What do you already know?
- List, cluster and mind map associations.
- Generate further questions.
- Focus your questions.

Initiate the search strategy.
- Break your question into subquestions.
- Identify keywords or concepts.
- Organize ideas visually (lists, outlines, webs, mind-maps).
- Identify potential information sources.

Locate resources.
Search for:
- print resources
- audiovisual resources
- computer resources
- community resources
- government publications
- experts in the subject area
- other.

Assess and comprehend the information.
- Skim and scan to identify relevant information.
- Identify what is fact vs. what is opinion.
- Determine point of view of each source; consider potential for bias.
- Determine how current each resource is.
- Recognize errors and omissions.
- Consider related concepts.
- Look for cause-and-effect relationships.
- Make note of points of agreement and disagreement.
- Classify, group or label information.

Interpret the information.

- Summarize information in your own words: paraphrase or quote important facts and details.
- Synthesize new information with what you already know.
- Does the information address your original problem?
- Begin to draw conclusions based on the information located

Communicate the information.

- What is your conclusion or resolution to the original problem?
- How will you demonstrate your understanding?
- What audience are you trying to reach?
- Will your approach be informative, persuasive or entertaining?
- What format will work best in presenting the information — written, spoken, visual?
- Create your presentation — provide appropriate documentation of your sources!

Evaluate the product and process.

- Self-reflection: consider what did and did not work; reflect on things you would change.
- Peer/teacher responses: what information did your audience emerge with? Is this congruent with the information you hoped to convey?

THE STORIES WE TELL OURSELVES: A SAMPLE GENERATIVE CURRICULUM UNIT

My first task, then, was to find out what kind of individuals I had in that classroom; my second was to help them build communities of support.

O'Reilley, 1993, p. 23

The following unit is from a generative topic which teachers and students can enter depending on needs, preferences, contexts, interests and current understandings. It is not a series of prescriptive, step-by-step lesson plans to be implemented or enacted in a specific classroom. It is meant as an outline. The content of the generative curriculum unit will emerge through reflective, interactive negotiation between teacher, learner and material.

The topic chosen to illustrate the generative curriculum unit, "The Stories We Tell Ourselves," is interdisciplinary, non-graded and broad enough in scope to incorporate all of the principles of differentiation. It is also reflective of post-modern approaches to curriculum development.

The following three stages illustrate the elements of the learning sequence as curriculum evolves from the generative topic, "The Stories We Tell Ourselves."

If we respect the inner world of the student, try to help her gain access to it and to express it with power and authority to a community of listeners, we are crafting a different future

O'Reilley, 1993, p. 52

Stage One — Explorations
Students embark on a safari-of-self through which they explore their personal pasts, and discover and develop commanding voices with which to articulate and express their inner landscapes.

Stage Two — Excavations
Students then set out to excavate the collective past through a rigourous examination of the tales which construct culture. It is a voyage which entails unearthing the mythology, history, music, art and philosophy underlying the stories that we, as a culture, have told and re-told.

Stage Three — Transformation: Going Forward as an Authentic Archaeologist
Finally, students recursively revisit personal mythology in light of the conventions, patterns and recurring motifs of the greater cultural narrative. Reading one's personal story in the context of the broader cultural story enables learners to locate their individual path in the context of the universal map, and envision themselves as active weavers of their present and future worlds.

The following sample unit does not spell out specific objectives for teachers or students. However, teachers must be aware of the skills, concepts and attitudes mandated by the programs of study for the particular grade or grades in question. They must carefully weave these prescriptive curriculum objectives into the generative process, which otherwise relies heavily on student choice in determining the content, process and product of the learning experience.

Overarching Goals

The following overarching goals should guide teaching and learning throughout the unit of study.

- Students must be encouraged to tap into their personal worlds, locate authentic, independent voices, and see themselves as active creators of their present and future worlds.
- Students should become familiar with the stories of the past and come to recognize the ways in which their personal stories are connected to the greater multicultural narrative.
- Students should become aware of the ways in which foundational archetypes are recuperated in subsequent literature and contemporary, popular expressions of culture.

- The transformation motif, which pervades much folklore and mythology, is evoked repeatedly in the stories that contemporary culture tells itself: tales of magic, enchantment, metamorphoses, journey, quest, and literal and figurative transformation are constantly recalled and re-presented. In order to be active creators of present and future worlds, students must become familiar with the collective unconscious. They must also come to see the relevance of the transformation motif to their own personal narratives, mythologies and stories.
- Sophisticated literary analysis skills, such as intertextuality, parody, satire, symbolism and allusion emerge naturally in the path of inquiry. Teachers can name and extend the complex concepts students employ in the course of discovering and unearthing different layers of textual meaning. A mastery of these tools not only influences the way we approach texts, but also the way we read the world.
- Crucial critical-thinking skills are developed as learners explore multiple perspectives, versions, and voices: seemingly fixed, original stories and symbols are questioned, unsettled and deconstructed, and the notion of "author-ity" is exposed as an open system rather than an absolute, univocal centre.
- Throughout the course of study, it is important to involve students in the endeavor of thinking about their thinking and equip them with the skills to chart their own unique, complex processes of learning. Learners develop metacognitive skills through constantly reflecting on the layers of meaning that are added throughout the unit of study. In the same way that texts are transformed as motifs and archetypes are passed, re-presented and re-interpreted through time, so too is a learner's understanding constantly transformed through encounters with additional information and perspectives.

Stage One: Explorations

Students should keep a discover journal or an explorer's log as they begin to make their way into the world within. Time must be built in for students to document their discoveries throughout the unit of study. These discoveries may consist of personal thoughts, reflections, revelations and insights, as well as required activity responses and notes. Journal responses can take a variety of forms, depending on the purpose of the entry. Students can decorate and respond with relevant visual images: magazine pictures, sketches, paintings, post cards, photographs, comic strips, greeting cards, quotes, song lyrics, etc.

LEARNER'S DISCOVERY OF SELF

Teacher's Role

- Help learners locate an authentic personal voice.
- Provide students with a sense of ownership and a sense of the way in which individual creations define the collective learning space.
- Facilitate self-awareness through having students explore the pieces of their pasts and personal symbolism.

Specific Student Activities

- Mind Mapping

  Mind mapping is a valuable cognitive processing tool, integrating right and left brain thinking skills, graphically organizing complex concepts and enhancing memory. Mapping "self" is an excellent starting point for familiarizing students with this complex cognitive strategy. Students can eventually transfer and apply mapping strategies to other topics and learning situations.

  Students can create personal mind maps to visually and symbolically express their personal identities and life stories. Students simply write their names or represent themselves at the beginning, top or centre of the map, and their unique story unfolds.

  - This activity allows an abundance of space for student choice and voice: maps may be creative self-portraits illustrating passions and interests, personal treasure maps charting learners' stories, dream-weaving webs mapping out personal visions and aspirations, or trees connecting self to family and significant others.
  - Students can adopt symbol systems to creatively represent themselves, family members, geographical locations or significant life-journey events. This allows students to work through the concept of metaphor relative to their own world.
  - Life-story maps provide an autobiographical base which can be revisited throughout the year and become a way of charting one's learning journey and personal growth over time.
  - This activity is an excellent lead in to a study of the hero archetype and quest narrative patterns.

- Symbolic Self

  Students create an artistic artifact to represent themselves.

  - Students consider ways in which intrinsic characteristics can be symbolically or creatively represented.
  - Self-constructs can be used to decorate the classroom, infusing learning space with a sense of student voice and ownership.

- Symbolic selves can serve as an organizational tool to structure classroom space and enhance metacognition. Students can physically locate and relocate their self-representations on an organizational board or scaffold to indicate which learning centre or classroom space they feel they need to work in at a particular time.

- Unearthing a Mosaic

  Mosaics are pictures or decorative patterns that tell a story. Many small, multicolored chips are used to create a larger visual representation. Early mosaics tell sacred stories about ancient worlds — how people lived and what was important to them — providing archaeologists with revealing glimpses into the past. Students can begin by examining the ancient mosaics of early cultures. Ensure that they document their observations and questions in their discovery journals. The following questions provide a starting point.
  - *What stories do these mosaics tell?*
  - *What important clues do these mosaics provide as we attempt to read the story of the past?*
  - *Do you notice any patterns or recurring symbols as you examine different mosaics?*

  Students can then create their own mosaics, using pottery fragments or small pieces of coloured construction paper. Students can draw or paint pictures, scenes or symbols on mosaic pieces; glue magazine pictures, pieces of nature, photographs or other treasured items; write words, lines of poetry or favourite song lyrics.

  Encourage students to think both of the individual chips and their vision for the overall picture. The smaller pieces of themselves should also be thought of as an artistic whole.
  - This activity provides students with an alternative, artistic way of telling their stories.
  - It also lends itself to several extension activities as the class moves into excavating the collective cultural past. Students can choose a mosaic or artistic artifact and become a story spinner, translating an ancient artifact's message into a story, or students can act as authentic historians, researching an early culture, discussing the historical, social and cultural context from which a mosaic or piece of art emerges.

TALES AND THEIR TELLERS

Teacher's Role

- Facilitate an awareness of the ways in which stories are transformed through retellings.

- Promote an understanding of point of view, persona, perspective and the subjective craft of the narrator.

- Approach authorship as an open system which is inevitably subject to the bias of the teller.

Specific Student Activities

- Artifact Writing
  Have students bring a treasure or artifact from home and create their own folklore. Students should first share the object's story or personal significance with the class. They may then embark on a "wildmind" (or freewriting) adventure, through which they record their tales. Once they have completed the first draft of their artifact stories, students may move into groups of two or three and collectively create a fictitious oral tale tying their various personal artifacts together. They can share their collective narrative with the class and discuss the ways in which their new, imaginative story varies from their individual first-draft stories. Individual students may then wildmind a second time, allowing the original story and the collectively reconstructed version to blur into one another. Students should consider the similarities and differences between the two wildmind writing samples they produce.
  - This activity explores the symbolic connection between objects and their associated meanings and stories.
  - It illustrates the ways in which stories are altered and transformed as additional layers of meaning are added through collective re-tellings.
  - Students become familiar with the prewriting technique of wildmind or freewriting, which becomes useful in later creative writing activities and assignments.

- Multiple Voices
  In a writer's workshop group, have students recall and narrate a particular event or real-life story. Once they have orally recounted their personal anecdotes, they may then write the stories from the perspective of a person, object or place that was also involved.

  As a precursor to this activity, it may be useful to provide students with examples of the ways in which tales are influenced by their tellers. For instance, compare passages of *Jane Eyre* with passages from *The Wide Sargasso Sea*, or the same fairy tale told from different points of view. Discuss the differences between the two versions of the same story, and the ways in which the details and descriptions included in each text depend on the bias of the narrator.
  - Students become aware of the effects that narrative persona and perspective have on the content and slant of a story.

- Subjective bias of authorship is exposed and the differences between various points of view are revealed. This may require a mini-lesson regarding first person, third person and third person omniscient narrators.
- Students are forced to question the narrative assumptions embedded in univocal texts. As students revisit their original stories, they consider the ways in which what may have been true or worthy of report for one voice may be irrelevant or untrue when the episode is recounted from another perspective.

CLAIMING AUTHOR-ITY: SELF AS STORYTELLER

Teacher's Role

- Develop a sense of prowess in the craft of story telling.

Specific Student Activities

- Writing for Our Lives

  Students write their memoirs or autobiographies.

  As a prewriting tool, it may be valuable to have students fill in a narrative time line by considering some of the following memory tuggers:
  - favourite friends growing up
  - favourite toys and games
  - places you have lived
  - life events which have resulted in personal change or transformation
  - influential friends and family members
  - school experiences, favourite subjects and teachers
  - passions and interests at various stages in your journey
  - personal growth, development and identity.

  This activity:
  - familiarizes students with the generic conventions of autobiography
  - becomes an avenue for exploring the life stories of historical and contemporary heroes and heroines
  - encourages students, when critically approaching biographies and autobiographies (others and their own), to consider subjective bias and to reflect on whether it is possible to truthfully tell one's story.

- Choose Your Own Adventure

  Invite students to embark on a time-travelling adventure. They can choose a geographical, historical or imaginative destination.

  Travelling through Time Zones — Students can design appropriate time-travel vehicles that will transport them to their chosen destinations. They can construct models, draw comprehensive diagrams or provide written descriptions of their machines. Encourage students to consider the connection or link between their time-travel vessels and their destinations. (If they are travelling to ancient Greece, for instance, a flying chariot may be appropriate.)

Writing Home — Students may then send letters or postcards to family or friends from their chosen destinations. They could include a description of the time or place they have travelled to, the sights they have seen and the people or beings they have met. In place of a letter, some students may want to write stories, travel guides or movie scripts.

Coming Home — Students can record their homecoming re-orientation in their discovery journals, reflecting on the lessons they learned in their explorations, considering how they were transformed by their adventures. This:
- provides a foundation from which to explore the hero myth, journey motif, quest narratives and tales of transformation
- lends itself to in-depth research of a particular destination, geographical location or historical context
- provides the opportunity for a mini-lesson on the genre of travel writing.

- The Mythology of Popular Culture
  Have students keep a scrapbook of media-constructed heroes, heroines and villains (from movie to stars to politicians). This:
  - provides a starting point from which to explore conventions of mythology and the hero motif
  - explores the ways in which media constructs and mythologizes individuals.

Stage Two: Excavations

In this portion of the unit, teachers should familiarize students with conventional literary archetypes, motifs, metaphors, conventions and story-telling patterns. This can be achieved through a comprehensive study of literal and metaphorical transformations in ancient mythology and traditional folklore.

It is also important for students to explore the ways in which traditional mythology is represented in other written, oral, visual and media texts. Through examining the connections and relationships among aesthetic texts, students gain an awareness of the way in which the stories we tell ourselves are comprised of a multitude of discursive threads and references. Each time a literary archetype, motif or symbol recurs or is recuperated in a subsequent text, its original meaning is deepened.

The mythology study must remain extremely open and be guided by student inquiry. Students should be provided with a great deal of choice in the tales and texts studied, and any teacher-guided information surrounding genre, conventions, narrative structure and recurring motifs must emerge from students' questions and observations.

Mythological Foundations

Teacher's Role

RIGOR!

Richness

Recursion

- Familiarize students with traditional, recurring literacy archetypes, motifs, characters, conventions and narrative patterns.
- Provide students with a variety of myths, tales and narratives.
- Provide students with an extensive reading list as a starting point for their own pursuit and collection of relevant tales. The folklore anthology will expand over the course of the unit as students supplement it with additional tales.

mythology is an interior road map of experience, drawn by people who have traveled it. myths speak to me because they express what I know inside is true. [they] come from the ground of my being, the unconscious that I have inherited from all that has come before me

Campbell, 1988,
pp. xvi, 37

Specific Student Activities

- Recursive Response Journal — Students can select and respond to a number of tales from the anthology and acquaint themselves with recurring conventions, symbols and narrative patterns. Students can respond to tales they are reading in a recursive response journal . . . a personal, informal writing space in which students may "talk back" to the tales they encounter and document growing understanding through revisiting earlier entries in light of subsequent texts. Students chart their learning path of inquiry by:
  - considering and recording prior knowledge of a concept, novel, author or genre before first reading
  - documenting their immediate response to the first reading of a selected piece of literature — students should use only the right page of journals and a specific colour of ink for these initial thoughts and reactions, and can mind map the story (characters, relationships, plots and symbols) for each tale
  - revisiting original responses as the unit of study progresses. Students should reserve the left side of the journal — and a different pen colour — for additional ideas and reflections. This enables students to:
    - make note of conventions, themes, symbols and characters as they recur from tale to tale
    - record any observations concerning narrative patterns — story structure, plot development, point of view
    - compare and contrast a repeated motif, archetype or convention as they appear in different stories
    - question their assumptions and chart their growing understanding.

Response journals are also an ideal arena for student-teacher dialogue. Teachers can respond to students' questions, observe developments in thoughts and understanding, and extend students in a meaningful, personally relevant way.

CREATING CONTEXT

Teacher's Role

Richness

- Cultivate an awareness of the importance of the social, historical, cultural milieu from which tales arise.

Relations

- Recreate the contextual backdrop from which select groups of tales emerge. Immerse students not only in the literature, but also in the social, historical, cultural world that the stories come from.

Specific Student Activities

- The Land of Enchantment

  Journey back to Anglo-Saxon England. Have individuals and groups of students research the time period of popular folk and fairy tales. Students can research the original storytellers. Some groups can study and emulate peasant life, industry and family structure. Others can research and imaginatively create castles, kingdoms and enchanted forests. Students can create murals, models and authentic artifacts.

  Certain days and times can be reserved for large and small group story dramas in which students and teachers assume specific roles and enact historical or literary events, or simply live a day-in-the-life, dine on appropriate cuisine, listen to traditional folk music, engage in oral story telling and sell student-created handicrafts.

- The Classical World

  Time travel back to the classical world of ancient Greece and Rome. Have each student assume a carefully researched identity or character. This should be a truly interdisciplinary endeavour — your classical culture should consist of philosophers, astronomers, mathematicians, rulers, servants, poets, playwrights, military and regular citizens. Recreate the Festival of Dionysus and attend a trilogy of plays. Stage a polis election. Compete in the Olympic games. Re-enact specific myths and emulate god and goddess life atop Mount Olympus.

- Canada's Mythology

  First, study what you know about a local tribe in your community. Then study other tribes and compare the similarities and differences. Research food, family, daily activities, celebrations and ceremonies. Utilize the resources within your community. Invite an Aboriginal storyteller and an elder into your classroom. Attend an Aboriginal ceremony or feast. Study other tribes in Canada.

BEYOND THE WRITTEN WORD

Teacher's Role

Richness

Relations

- Broaden the concept of textuality. Extend the definition of text beyond written works to include any product of culture. Students should be encouraged to view everything from music, visual arts, media, scientific data, mathematical theorems, theatrical productions, speech and gesture as stories.
- Teachers must value various forms of expression and encourage a variety of products for assessment.

Specific Student Activities

- Students should study a variety of cultural products as texts. Students can examine and compare the same story as told through a work of art, a film, a story, an historical text, a personal journal, medical records or media constructions, exploring the various pieces which comprise a culture's identity. Teachers can model this multi-textual study by bringing in alternative representations of classical myths. For example,
  - – read the myth of Orpheus and Eurydice
  - – read Ovid's poem *Orpheus and Eurydice*
  - – study Jacques Offenbach's opera, *Orpheus in the Underworld (Orphee aux Enfers)* (1858)
  - – listen to Christoph Willibald Gluck's *Orpheus and Eurydice (Orfeo and Euridice)* (1762)
  - – read Rainer Maria Rilke's "Orpheus, Eurydice, Hermes" (1904)
  - – read Jean Cocteau's *Orpheus* (1926)
  - – read Jean Anouilh's *Eurydice* (1941)
  - – listen to Franz Liszt's symphonic poem *Orpheus*
  - – study Titian's painting *Orpheus and Eurydice*
  - – study Poussin's painting *Landscape with Orpheus and Eurydice*.
- The concept of evaluative product should also be broadened. Students should be encouraged to demonstrate their understanding of a particular concept or their version of a particular tale through a variety of media, such as:
  - – poetry
  - – narrative
  - – film or 3D animation
  - – emulating a particular artistic form or style popular to a specific culture
  - – oral presentation or reenactment of traditional storytelling
  - – journal entry of a mythic or folk character.

THE MALLEABILITY OF MYTH

Teacher's Role

Richness

- Develop students' ability to handle multiple points of view and diverse perspectives.

Relations

- Ensure that students approach various textual voices and versions critically, with an awareness of subjective/authorial bias and a consideration of the repercussions of re-tellings and recuperated motifs.

Specific Student Activities

- Study multiple versions of the same essential story or myth.
- Ensure that students examine variations and detail differences in relation to the individual storyteller or the culture from which the re-telling emerges. This often becomes a valuable source of contextual information as variations can be the result of a culture/storyteller's idiosyncratic values, beliefs and issues.
  - Grimm's version of *Little Red Cap* can be compared to the traditional folk version of *The Story of the Grandmother*, Perrault's *Little Red Riding Hood*, and Chang's *The Chinese Red Riding Hoods*.
  - Grimm's *Ashputtle* can be compared to Perrault's *The Little Glass Slipper* and the Canadian Aboriginal version *Little Burnt Face*.
  - Compare the Disney movies of familiar folk and fairy tales with traditional versions.
  - Compare the differences in illustrations of a specific tale between two or more texts.

INTERTEXTUAL ECHOES

Teacher's Role

Relations

Recursion

- Facilitate intertextual awareness. Draw students' attention to the way in which texts overtly and covertly refer to other texts.
- Encourage students to consider the way in which these intertextual references and reverberations transform a concept, story or version.

Specific Student Activities

- Trace a story, myth or tale from its traditional origins, through literary adaptations and modern recuperations.
  - Rags to Riches
    Trace the Cinderella story from Perrault through to contemporary adaptations, references and reworkings. The classic fairy tale theme continuously resurfaces in everything from modern films ("Pretty Woman"), literature and media.

- The Quest of the Hero
  The journey of Odysseus and the trials of Hercules have greatly influenced the modern myth of the hero. Compare traditional hero quests with contemporary quest narratives, such as *Star Wars*, *Indiana Jones*, Paelo Coelho's novel *The Alchemist* and stories featuring female heroines. A particularly useful resource for this comparison is Joseph Campbell's *The Hero with a Thousand Faces* (1949) and Marian Murdoch's *The Heroine's Journey*.

- Find a pop culture echo of a traditional story or myth. Students should watch for any contemporary references to mythological archetypes, symbols, characters or themes. References may take the form of an overt allusion, parody or re-telling, or may inadvertently draw on themes or patterns that are somehow reminiscent of conventional mythology. Students should consider the ways in which traditional stories inform our contemporary imagination.

RIGOR!

LEFT TO OUR OWN LITERARY DEVICES

Teacher's Role

- Provide students with a repertoire of thinking/reading skills to critically approach the literary and historical stories a culture tells itself.

- Many of these student activities naturally open the door to a discussion or mini-lesson surrounding the following concepts:
  - allusion: a reference, explicit or indirect, to a well-known person, place, event, or to another literary work or passage
  - parody: an imitation of the serious materials and manner of a particular literary work or the characteristic style of an author — often, the stylistic and other features of a serious literary form are applied to a comically inappropriate subject
  - satire: the art of diminishing a subject by making it ridiculous and evoking attitudes of amusement or scorn
  - intertextuality: the ways in which texts are linked, whether overtly through a specific allusion or reference, or inadvertently through similar theme, characters, structure, style or language.

Specific Student Activities

- Students may find relevant examples of these concepts in the material they are studying. They may also decide to employ one of the above techniques or concepts in their own creative re-telling of a particular tale or myth.

Active Constructors of Meaning

Teacher's Role

Relations

Recursion

- Allow students to apply the repertoire of critical thinking and reading tools they have mastered. Enable students to see connections between the past, present and future.

Specific Student Activities

- Students can re-tell, re-craft, modernize, alter or parody a traditional tale. They can communicate their modified version orally, visually, narratively, artistically, theatrically or otherwise.

Connections Across the Disciplines

Teacher's Role

Relations

- Encourage students to see cross-disciplinary connections, transfer knowledge and concepts to other subject areas.

Rather than deny the role personalness and subjectivity play in interpretation, one uses personalness and subjectivity to help achieve better, deeper, more comprehensive understanding.

Doll, 1993, p. 292

Specific Student Activities

- Provide students with the opportunity to apply their learning through integrated projects or student-run workshops that tie storytelling knowledge to other curricular subjects and other interdisciplinary activities.
  - A math project, for instance, could incorporate the theories and theorems of Classical mathematicians. A science activity could be focussed on Greek astronomy or First Nations view of nature. Social studies mapping assignments could record the origins of world folk stories.

Stage Three: Transformations

Creating Metafiction

Teacher's Role

Relations

Richness

Recursion

RIGOR

- Encourage students to demonstrate their understanding of the stories our culture tells itself in personally relevant and meaningful ways. Guide students to integrate their own life stories into the greater cultural text.
- Draw students' attention to the tenuous line between truth and fiction, as well as between personal and collective.

Specific Student Activities

- Students apply their understanding of traditional narrative forms, conventions, patterns, motifs, themes, symbols and archetypes explored within the unit of study by:
  - creatively re-writing their own life stories using folk/mythical conventions, symbols, language and patterns
  - writing themselves into a familiar myth, story or folk tale

- constructing or producing their own creative anthologies. Students can produce a collection of personal and published stories, intermingling personal anecdotes, autobiography excerpts, and ancestral narratives with formal myths and tales studied over the course of the unit. Students can unify their anthologies thematically by seeking cultural tales that somehow connect with their own personal context. Their anthologies could be expressed theatrically, narratively, artistically, poetically or in any combination.

SECTION 7: APPENDICES

APPENDIX 1

RECOGNIZING GIFTEDNESS: IDENTIFYING CHARACTERISTICS

Student's Name: ______________ Grade: ________ School Year: ________

School: ______________ Teacher/Evaluator: ______________

Directions: Examine each of the following statements as it pertains to a particular intelligence. Then, using the scale below, indicate the degree to which each statement describes the student's behaviour or interest compared to other students his or her age.

1 — Rarely, seldom or never **3 — Quite often or frequently**
2 — Occasionally, sometimes **4 — Almost always or always**
DK — Don't know or have never observed

A. General Intelligence

_____ Rapid learner: masters content, skills, concepts and procedures sooner (at an earlier age), faster (with less drill and practice) and more thoroughly (in greater depth or breadth)
_____ Highly inquisitive/intensely curious: has interests that are widely eclectic and/or intensely focused: may have numerous hobbies and/or collections
_____ Exceptionally eager, enthusiastic and energetic (mentally and/or physically): has an intense desire to know, understand, do, feel or create
_____ Thrives in challenging/complex problem solving situations: takes pleasure in intellectual activity
_____ Has an unusually long attention span: sustains long periods of concentration
_____ Highly motivated: becomes intensely absorbed in various pursuits (particularly those which initially intrigue him or her): persistent in task completion
_____ Creative, imaginative, inventive and versatile in thought, expression or action
_____ Intuitive, recognizes connections or deeper meanings without conscious awareness of thoughts or feeling: may not always be able to explain how he or she reached a conclusion or why a solution is correct
_____ Has a keen sense of humour that may be gentle or hostile: enjoys puns, jokes, nonsense rhymes, tongue twisters, cartoons, comics, comedies, satires
_____ Has an excellent memory for words, numbers, images, sensations, actions or events

B. Verbal-Linguistic

_____ Possesses an extensive, advanced receptive (listening/reading) and expressive (speaking/writing) vocabulary
_____ Acutely sensitive to the meaning and structure of language
_____ Effectively uses language (spoken/written) to request, respond, entertain, direct or convince others
_____ Has a vast storehouse of information on a variety of topics
_____ Enjoys listening to the spoken word (material read aloud, storytelling, radio commentary)

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______ Reads widely, intensely and at an advanced level
______ Communicates effectively in two or more languages (or indicates a strong desire to)
______ Adept at word games and puzzles: e.g., Scrabble™, Boggle™, crossword puzzles, solving riddles

C. Logical-Mathematical

______ Possesses strong powers of abstraction: conceptualization and synthesizing abilities
______ Readily grasps underlying principles: generalizes skillfully: makes valid assumptions
______ Skillfully uses logic to order/organize information and discover patterns, relationships and connections
______ Readily perceives similarities, differences and anomalies
______ Has rapid insight into cause-effect relationships
______ Is skeptical, critical and evaluative: quick to spot inconsistencies
______ Adept at experimental inquiry: questions to discover the "hows," "whys," and "what ifs:" readily formulates hypotheses: skillfully conducts research
______ Readily masters math skills, concepts and processes
______ Adept at games of strategy: e.g., chess, checkers, Clue™, Tetris™, and solving logic puzzles and brainteasers

D. Visual-Spatial

______ Sensitive to aesthetic quality and intrinsic beauty of things
______ Possess strong directionality and orientation-in-space skills
______ Visualizes skillfully: reports vivid mental images
______ Has a strong sense of the significant: has an eye for important details
______ Artistic and productive in one or more visual mediums (drawing, painting, sculpting, designing, drafting, photography)
______ Incorporates a large number of elements into art work: varies the subject and content: produces balance and order in finished product
______ Adept at reading/drawing maps, charts, graphs, diagrams
______ Enjoys movies, videos, slides, photographs or other visual presentations

E. Musical-Rhythmic

______ Easily learns, remembers and accurately reproduces melodies
______ Sensitive to the rhythm in music: responds by tapping, clapping or other body movement: able to keep time with music when playing a simple percussion instrument
______ Adept at playing one or more musical instruments (or indicates a strong desire to learn)
______ Skillfully composes music and/or writes lyrics
______ Ably sings in a choir or other choral group
______ Sensitive to environmental sounds: e.g., rain on a rooftop, ticking clocks, birds singing

F. Bodily-Kinesthetic

______ Handles his or her body with ease and poise
______ Adept at mimicry: role playing, improvizing, acting
______ Has a well-developed sense of timing and sequence
______ Effectively uses gestures, facial expressions and body language to communicate thoughts and feelings

____ Is naturally athletic: highly skilled at balance, movement and body control

____ Adept at manipulating objects: skilled at penmanship, keyboarding, building three dimensional objects, assembling models, making crafts, carpentry, mechanics

____ Actively pursues opportunities to attend and/or participate in athletic (sports or dance) and/or theatrical performances

G. Naturalist

____ Acutely aware of and responsive to the natural environment

____ Keenly observant and highly alert: sees the unusual, what might be overlooked by others

____ Perceives connections and patterns in the plant and animal kingdoms

____ Readily discerns, identifies, categorizes and classifies plants, animals, minerals, soils, clouds and other features in the natural world

____ Enjoys outdoor pursuits (camping, hiking, bird watching, etc.)

H. Intrapersonal

____ Keenly aware of personal thought processes, motivations and emotions: is reflective and introspective

____ Has a well-developed sense of self: is realistic about capabilities and limitations

____ Works well independently: is organized, conscientious and goal-directed

____ Perfectionistic: exhibits high personal standards: may set unrealistic expectations: may procrastinate

____ Emotionally sensitive and intense: sensitive to injustice, criticism, sarcasm, rejection, joy, kindness, love: has a highly developed moral and ethical sense

____ Confident: self-assured: takes calculated risks: is comfortable espousing unconventional or unpopular positions: unwilling to accept authoritarian pronouncements without critical examination

____ Individualistic: does not fear being different: able to be conforming or non-conforming as the situation demands

____ Prefers individual pursuits to social or group activities

I. Interpersonal

____ Naturally assumes leadership roles: takes initiative and assumes responsibility

____ Skilled at organizing, communicating, mediating and negotiating

____ Demonstrates character and integrity by expecting and practising qualities associated with honesty, fairness and enterprise

____ Sociable: relates and responds well to children and adults

____ Altruistic and idealistic: is concerned with moral and social issues in the community and the world at large

____ Favours social pastimes over individual recreations

APPENDIX 2

BRILLIANT BEHAVIOURS[111]

Student ______________________ Date ______________

Strength ______________________________________

True?	Behaviour
	Humour — Exceptionally keen sense of the comical, bizarre, absurd.
	Motivation — Intense desire to know, do, feel, create or understand.
	Interests — Ardent, sometimes unusual, passionate, sometimes fleeting.
	Communication/Expressiveness — Extraordinary ability to convey meaning or emotion through words, actions, symbols, sounds or media.
	Inquiry — Probing exploration, observation or experimentation with events, objects, ideas, feelings, sounds, symbols or media.
	Problem-solving — Outstanding ability to bring order to chaos through the invention and monitoring of paths to a goal; enjoyment of challenge.
	Sensitivity — Unusually open, perceptive or responsive to experiences, feelings and to others.
	Intuition — Sudden recognition of connections or deeper meanings without conscious awareness of reasoning or thought.
	Reasoning — Outstanding ability to think things through and consider implications or alternatives; rich, highly conscious, goal-oriented thought.
	Imagination/Creativity — Extraordinary capacity for ingenious, flexible use of ideas, processes or materials.
	Memory/Knowledge/Understanding — Unusual capacity to acquire, integrate, retain and retrieve information or skills.
	Learning — Ability to acquire sophisticated understanding with amazing speed and apparent ease.

APPENDIX 3

CLASS ASSESSMENT[112]

	Characteristics	Student Name									
Above-Average Intelligence	Advanced vocabulary										
	Good memory										
	Learns quickly and easily										
	Large fund of information										
	Generalizes skillfully										
	Comprehends new ideas readily										
	Makes abstractions easily										
	Perceives similarities, differences, relationships										
	Makes judgements and decisions										
Creativity	**Questions. Curious about many topics**										
	Has many ideas										
	Sees things in varied ways										
	Offers unique or unusual ideas										
	Adds details; elaborates										
	Transforms or combines ideas										
	Sees implications or consequences easily										
	Risk-taker; speculates										
	Feels free to disagree										
	Finds subtle humour, paradox or discrepancies										
Task Commitment	**Sets own goals, standards**										
	Intense involvement in preferred problems and tasks										
	Enthusiastic about interests and activities										
	Needs little external motivation										
	Prefers to concentrate on own interests/projects										
	High level of energy										
	Perseveres										
	Completes, shares products										
	Eager for new projects challenges										
	Assumes responsibility										

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APPENDIX 4

GIFTED STUDENTS — TEACHER RECOGNITION CHECKLIST[113]

Read each item. Consider the students in the class and fill in the names of those who strongly fit the categories listed. The Gifted Students — Individual Rating Scale (on the following page) could then be completed for those students whose names appear frequently on this initial recognition list.

CHARACTERISTIC	STUDENTS' NAMES		
Possesses superior powers of reasoning, of dealing with abstractions.			
Has great intellectual curiosity.			
Learns easily and readily.			
Has a wide range of interests.			
Has a broad attention span that allows him or her to persevere in solving problems.			
Has a superior vocabulary.			
Has the ability to do independent work effectively.			
Has learned to read early (often well before school age).			
Exhibits keen powers of observation.			
Shows initiative and originality in class work.			
Shows alertness and a quick response to new ideas.			
Has the ability to memorize quickly and easily.			
Has a great interest in the nature of humanity and the world.			
Possesses unusual imagination.			
Follows complex directions easily.			
Reads rapidly.			
Has several hobbies.			
Has reading interest that covers a wide range of subjects.			
Makes frequent and effective use of the library.			
Demonstrates superior ability in math, particularly problem solving.			

APPENDIX 4 (CONT'D)

GIFTED STUDENTS — INDIVIDUAL RATING SCALE[114]

Student's Name: ____________________ **Year Level:** ____________

Date: ____________________ **Age:** ____________

Check the box that best describes the frequency of the following characteristics or behaviours:

- **5** Has this trait to a high degree
- **4** Has this trait more than the typical child
- **3** Compares with the typical child
- **2** Has this trait less than the typical child
- **1** Lacks this trait

	5	4	3	2	1
Has superior powers of reasoning					
Displays intellectual curiosity					
Learns easily					
Has a wide range of interests					
Has a broad attention span					
Has a superior vocabulary					
Works independently					
Learns to read early					
Has keen powers of observation					
Shows initiative and originality					
Is alert					
Memorizes quickly and easily					
Displays interest in humanity					
Has an unusual imagination					
Follows complex directions					
Reads rapidly					
Has several hobbies					
Reads a wide range of subjects					
Uses the library frequently and effectively					
Is superior in mathematics					

Look for patterns of "has this trait to a high degree" rather than an aggregated score.

APPENDIX 5

YOUNG GIFTED STUDENTS — TEACHER RECOGNITION CHECKLIST[115]

Read each item. Consider the students in the class and fill in the names of those who strongly fit the categories listed. The Young Gifted Students — Individual Rating Scale (on the following page) could then be completed for those students whose names appear frequently on this initial recognition list.

CHARACTERISTIC	**STUDENTS' NAMES**		
Has verbal behaviour characterized by richness of expression, elaboration and fluency.			
Possesses a large storehouse of information about a variety of topics beyond the usual interests of children of that age.			
Has rapid insight into cause-effect relationships; tries to discover the how and why of things; asks many provocative questions; wants to know what makes things or people tick.			
Has a ready grasp of underlying principles and can quickly make valid generalizations about events, people or things; looks for similarities and differences.			
Displays a great deal of curiosity about many things; is constantly asking questions about anything and everything.			
Generates a large number of ideas or solutions to problems and questions.			
Is uninhibited in expressions of opinion.			
Is a high risk taker.			

APPENDIX 5 (CONT'D)

YOUNG GIFTED STUDENTS — INDIVIDUAL RATING SCALE[116]

Student's Name: ____________ **Year Level:** ____________

Date: ____________ **Age:** ____________

Check the box that best describes the frequency of the following characteristics and/or behaviours:

- **5** Has this trait to a high degree
- **4** Has this trait more than the typical child
- **3** Compares with the typical child
- **2** Has this trait less than the typical child
- **1** Lacks this trait

	5	4	3	2	1
Has verbal behaviour characterized by richness of expression, elaboration and fluency.					
Possesses a large storehouse of information about a variety of topics beyond the usual interests of children that age.					
Has rapid insight into cause-effect relationships; tries to discover the how and why of things; asks many provocative questions; wants to know what makes things or people tick.					
Has a ready grasp of underlying principles and can quickly make valid generalizations about events, people or things; looks for similarities and differences.					
Displays a great deal of curiosity about many things; is constantly asking questions about anything and everything.					
Generates a large of number of ideas or solutions to problems and questions.					
Is uninhibited in expressions of opinion.					
Is a high risk taker.					

Look for patterns of "has this trait to a high degree" rather than an aggregated score.

APPENDIX 6

PARENT IDENTIFICATION FORM[117]

Student's Name: **Year Level:** **Age:**

Parents' Names:

SECTION A

Instructions: In relation to the typical child in the neighbourhood, please circle a number for each item which best describes your child:

5 Has this trait to a high degree
4 Has this trait more than the typical child
3 Compares with the typical child
2 Has this trait less than the typical child
1 Lacks this trait

Has advanced vocabulary; expresses himself or herself fluently and clearly.	5	4	3	2	1
Thinks quickly.	5	4	3	2	1
Wants to know how things work.	5	4	3	2	1
Is an avid reader.	5	4	3	2	1
Puts unrelated ideas together in new and different ways.	5	4	3	2	1
Asks reasons why — questions almost everything.	5	4	3	2	1
Likes grown-up things and to be with older people.	5	4	3	2	1
Has a great deal of curiosity.	5	4	3	2	1
Is adventurous.	5	4	3	2	1
Has a good sense of humour.	5	4	3	2	1
Is impulsive.	5	4	3	2	1
Tends to dominate others if given the chance.	5	4	3	2	1
Is persistent — sticks to the task.	5	4	3	2	1
Has good physical co-ordination and body control.	5	4	3	2	1
Is independent and self-sufficient.	5	4	3	2	1
Reasons.	5	4	3	2	1
Has a wide range of interests.	5	4	3	2	1
Has a broad attention span which allows him or her to concentrate and persevere in problem solving and pursuing interests.	5	4	3	2	1
Shows initiative.	5	4	3	2	1
Seeks his or her own answers and solutions to problems.	5	4	3	2	1
Has a great interest in the future and/or world problems.	5	4	3	2	1
Follows complex directions.	5	4	3	2	1

Is prepared to take some social risks.	5	4	3	2	1
Is a leader.	5	4	3	2	1
Enjoys complicated games.	5	4	3	2	1
Sets high goals for himself or herself.	5	4	3	2	1
Continually questions the status quo.	5	4	3	2	1

SECTION B

1. Did your child read before he or she went to school? Yes / No

   If the answer is yes, did your child teach himself or herself to read? Yes / No

2. Does your child play a musical instrument? Yes / No

   Is so, which? ______________________________

3. In what outside activities does your child participate? ______________________________

   ____

   ____

4. What are your child's special interests or hobbies? ______________________________

   ____

   ____

5. What recent books has he or she read and enjoyed? ______________________________

   ____

   ____

6. Please comment, where appropriate, on any of the following:

   Your child's . . .
   - unusual accomplishments (present or past)
   - special talents
   - special opportunities
   - relationships with others
   - preferred activities when alone
   - expression of boredom
   - special problems and needs.

____

____

____

____

APPENDIX 7

TWELVE WAYS YOUR CHILD/STUDENT SHOWS GROWTH IN THINKING SKILLS[118]

This is a parent/teacher tool for rating a student's home/school thinking behaviours at the beginning and end of a school year. It should identify student strengths and weaknesses, and promote parent/teacher team goal setting to help students develop more successful thinking strategies.

Mark each behaviour using: N = Not Yet S = Sometimes F = Frequently

During the ____________ school year. I noticed that ______________________
(Name)

__________ does the following:
(Age)

Parent	Teacher	
		1. Keeps on trying; does not give up easily.
		2. Shows less impulsivity; thinks more before answering a question.
		3. Listens to others with understanding and empathy.
		4. States several ways to solve a problem (shows flexibility in thinking).
		5. Puts into words how he or she solved a problem; is aware of his or her own thinking.
		6. Checks for accuracy and precision; checks completed work without being asked.
		7. Asks questions; wants to find out new information.
		8. Uses knowledge already learned in new situations, can solve problems in everyday living, like using allowance, taking messages, going to the store and practising safety.
		9. Uses words more carefully to describe feelings, wants, etc.
		10. Uses touch, feel, taste, smell, sound and sight to learn, enjoys art, music, experimenting and active play.
		11. Enjoys making and doing original things; likes to show individuality in thought and dress.
		12. Enjoys problem solving; displays wonderment, inquisitiveness and curiosity.

This year I will help ______________________________ develop skills

in: ______________________________

by: ______________________________

____

____

Signed: ______________________________ (Parent)

This year, I will help ______________________________ develop skills

in: ______________________________

____

____

Signed: ______________________________ (Teacher)

Date: ____________________ Review Date: ____________________

APPENDIX 8

PEER NOMINATION[119]

Teacher: ____________________ **Grade:** __________ **Date:** ____________________

Identify three students in your class that you think best answer each question. This form is anonymous.

1. Imagine that your class has been chosen to appear on a popular TV program where participants will be asked skill-testing and general-knowledge questions. Which students would you choose to represent your class?

   ____________________ ____________________ ____________________

2. Imagine that you're having difficulty understanding your homework assignment that is due tomorrow. Who would you call to ask for help?

   ____________________ ____________________ ____________________

3. When you're learning and talking about things in class, which students have the most unusual ideas and ask the most interesting questions?

   ____________________ ____________________ ____________________

4. If your class was given a pet, which students would think of the most unusual name for it?

   ____________________ ____________________ ____________________

5. If your class learned a new game, which students would best teach it to another class?

   ____________________ ____________________ ____________________

6. If your class was going to have a special celebration for your teacher, which students could best organize it?

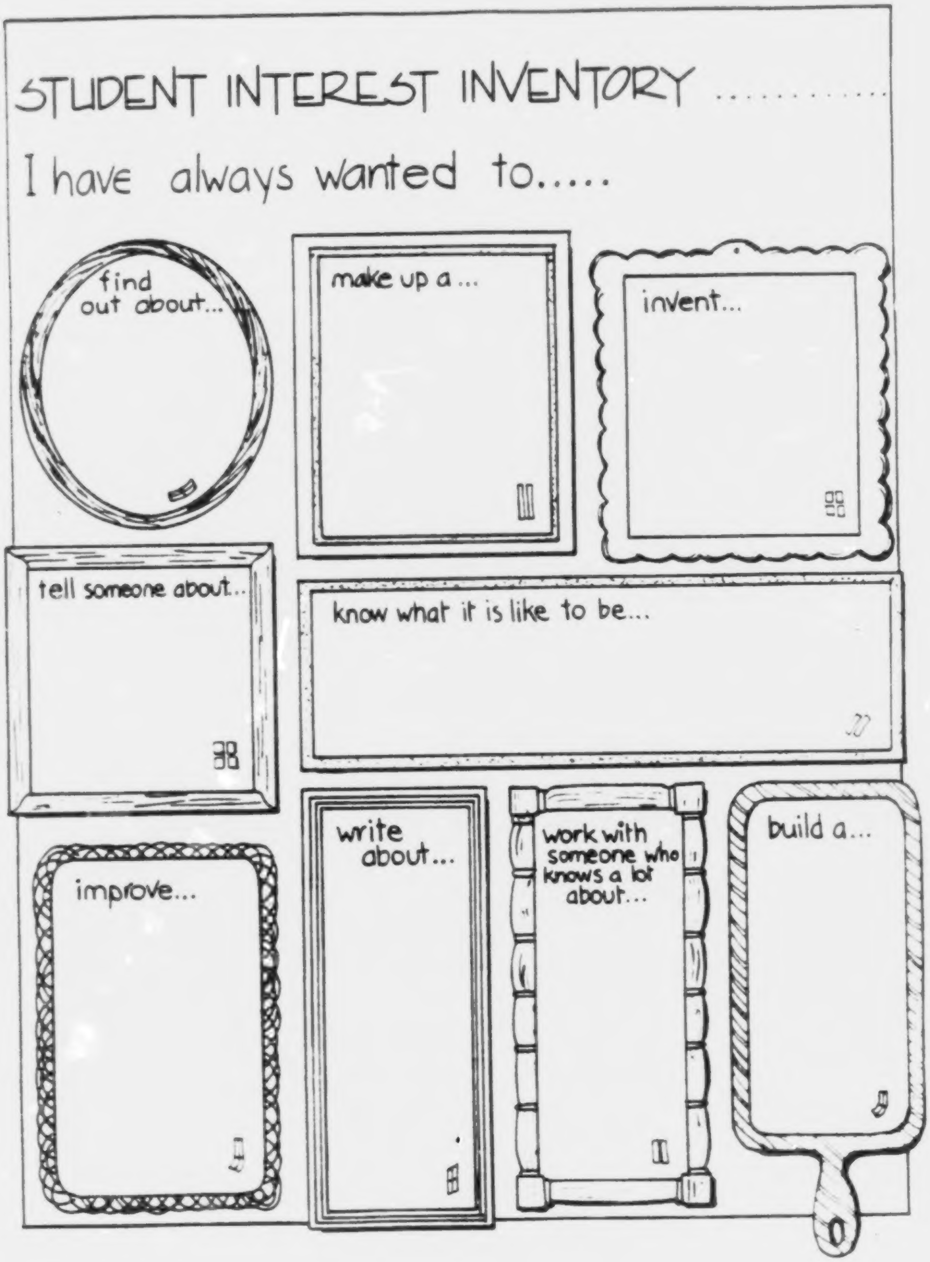
   ____________________ ____________________ ____________________

Count the number of times each student's name appears. List the three students whose names appear most often.

____________________ ____________________ ____________________

APPENDIX 9

STUDENT INTEREST INVENTORY[120]


STUDENT INTEREST INVENTORY ....
I have always wanted to.....
find out about...
make up a ...
invent...
tell someone about...
know what it is like to be...
improve...
write about...
work with someone who knows a lot about...
build a...

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APPENDIX 10

INTEREST INVENTORY FOR YOUNG STUDENTS[121]

How Do You Feel About

☺ ______________________________ ☹

☺ ______________________________ ☹

☺ ______________________________ ☹

☺ ______________________________ ☹

☺ ______________________________ ☹

☺ ______________________________ ☹

☺ ______________________________ ☹

☺ ______________________________ ☹

APPENDIX 10 (CONT'D)

INTEREST INVENTORY FOR YOUNG STUDENTS[121]
SAMPLE COMPLETED FORM

How Do You Feel About

☺ School ☹

☺ Recess ☹

☺ Gym ☹

☺ Reading ☹

☺ Arithmetic ☹

☺ ________________ ☹

☺ ________________ ☹

☺ ________________ ☹

APPENDIX 11

STUDENT INTEREST INVENTORY[122]

Student's Name: ____________________ **Year Level:** ____________

Date: ____________________ **Age:** ____________

1. What do you like doing most when you have free time?

2. My interests at school are:

3. My interests at home are:

4. Are you a collector? List the things you collect:

5. What do you think you are good at?

6. What do you like to do least?

APPENDIX 12

INTEREST INVENTORY FOR PRIMARY AGED STUDENTS[123]

1. In school, the thing I like to do best is ____________________
2. Outside of school, the thing I like to do best is ____________________
3. If I had a million dollars, I would ____________________
4. When I grow up, I will ____________________
5. I hate ____________________
6. My favourite animal is ____________________
7. The best sport is ____________________
8. When nobody is around, I like to ____________________
9. The person I like best is ____________________
10. Next summer, I hope to ____________________
11. I like to collect ____________________
12. My favourite place to be is ____________________
13. The things I like to make are ____________________
14. The best book I ever read was ____________________
15. The best TV show is ____________________
16. What I think is funny is ____________________

APPENDIX 13

INTEREST INVENTORY FOR INTERMEDIATE AGED STUDENTS[124]

It can be helpful when assigning a topic for a report, suggesting a good book or selecting meaningful examples, to know students' preferences and interests. Use the interest inventory during the first week of school.

1. Outside of school, my favourite activity is ____________________
2. I work at ____________________. My job is ____________________
3. The sport I like to watch best is ____________________
4. The sport I like to play best is ____________________
5. After high school, I plan to ____________________
6. The job I want to be doing as an adult is ____________________
7. In school, my favourite subject is ____________________
8. The subject in which I get the best grade is ____________________
9. I would like to learn more about ____________________
10. My main hobby or leisure time activity is ____________________
11. For pleasure, I read ____________________
12. I spend about __________ hours or __________ minutes a week reading for fun.
13. The best book I have ever read was ____________________
14. The book I am reading now is ____________________
15. My favourite magazine is ____________________
16. The part of the world that interests me the most is ____________________
17. When I am finished with school, I hope to live in ____________________
18. The kinds of books or stories I like to read are ____________________
19. My favourite TV show is ____________________
20. What makes me mad is ____________________

APPENDIX 14

IPP — STUDENT PROFILE[125]

Name: ______________________ Teacher: ______________________

Date: __________ Grade/Class: ________ School: ______________________

Learning Styles/Strengths:

Results from Achievement Tests

Name of Test	Date Given	Result

Student Interests:

Results from Formal Testing

Name of Test	Date Given	Result

Special Abilities:

Teacher Observations:

Parent Observations:

Summary of Needs:

Student's vision, goals for self:

* Append samples of student work

APPENDIX 15

MODALITY STRENGTH CHECKLIST[126]

Directions: In each of the 14 sections, check off the one description that best represents your view of yourself. Check only one column (V, A or K) for each section. Then, total the number of checks for Columns V, A and K. The column with the highest number of checks broadly represents your preferred learning modality.

"I" "HE/SHE"	V VISUAL	A AUDITORY	K KINESTHETIC
1. Learning Style	Learn by seeing; watching demonstrations ____	Learn through verbal instructions from others or self ____	Learn by doing, direct involvement ____
2. Reading	Like description; sometimes stops reading to stare into space and imagine scene; intense concentration ____	Enjoy dialogue, plays; avoid lengthy description; unaware of illustrations; move lips or sub-vocalize ____	Prefer stories where action occurs early; fidget when reading; handle books; not an avid reader ____
3. Spelling	Recognize words by sight; rely on configuration of words ____	Use a phonics approach; have auditory word attack skills ____	Often a poor speller; write words to determine if they "feel" right ____
4. Handwriting	Tend to be good, particularly when young; spacing and size are good; appearance is important ____	Have more difficulty learning in initial stages; tend to write lightly; say strokes when writing ____	Good initially; deteriorate when space becomes smaller; push harder on writing instrument ____
5. Memory	Remember faces, forget names; write things down, take notes ____	Remember names; forget faces; remember by auditory repetition ____	Remember best what was done, not what was seen or talked about ____
6. Imagery	Vivid imagination; think in pictures, visualize in detail ____	Sub-vocalize; think in sounds; details less important ____	Imagery not important; images that do occur are accompanied by movement ____
7. Distractibility	Generally unaware of sounds; distracted by visual disorder or movement ____	Easily distracted by sounds ____	Not attentive to visual, auditory presentation so seem distractible ____
8. Problem-solving	Deliberate; plan in advance; organize thoughts by writing them; list problems ____	Talk problems out; try solutions verbally, sub-vocally; talk self through problem ____	Attack problems physically; impulsive; often select solution involving greatest activity ____
9. Response to Periods of Inactivity	Stare; doodle, find something to watch ____	Hum; talk to self or to others ____	Fidget; find reasons to move; hold up hand ____
10. Response to New Situations	Look around; examine structure ____	Talk about situation, pros and cons, what to do ____	Try things out; touch, feel, manipulate ____

"I" "HE/SHE"	V VISUAL	A AUDITORY	K KINESTHETIC
11. Emotionality	Somewhat repressed: stare when angry: cry easily: beam when happy: facial expression is a good index of emotion	Shout with joy or anger: blow up verbally but soon calm down: express emotion verbally and through changes in tone, volume, pitch of voice	Jump for joy: hug, tug and pull when happy: stamp, jump and pound when angry: stomp off: general body tone is a good index of emotion
12. Communication	Quiet: do not talk at length: become impatient when extensive listening is required: may use words clumsily: embellishment: use words such as **see**, **look**, etc.	Enjoy listening but cannot wait to talk: descriptions are long but repetitive: like hearing self and others talk: use words such as **listen**, **hear**, etc.	Gesture when speaking: do not listen well: stand close when speaking or listening: quickly lose interest in detailed verbal discourse: use words such as **get**, **take**, etc.
13. General	Neat, meticulous, like order: may choose not to vary appearance	Matching clothes not so important: can explain choices of clothes	Neat but soon become wrinkled through activity
14. Response to the Arts	Not particularly responsive to music: prefer the visual arts: tend not to voice appreciation on art of any kind but can be deeply affected by visual displays: focus on details and components rather than the work as a whole	Favour music: find less appeal in visual art but am readily able to discuss it: miss significant detail: do not appreciate the work as a whole: am able to develop verbal association for all art forms: spend more time talking about pieces than looking at them	Respond to music by physical movement: prefer sculpture: touch statues and paintings: at exhibits, stop only at those in which you can become physically involved: comment very little on any art form
	V	A	K

Total checks in each column (combined total must equal 14)

Preferred Learning Modality is ____________________

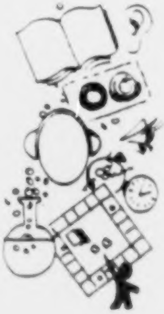
APPENDIX 16

LEARNING PREFERENCES[127]

There are different ways to learn. Indicate your preference by placing a number in the circles:
1 = Always, 2 = Sometimes, 3 = Seldom.

I PREFER LEARNING BY:

○ reading books and magazines
○ listening to a person talk or a tape recorder
○ watching people do things
○ watching films, TV or movies
○ putting things together and taking them apart
○ experimenting with things
○ playing a game
○ acting it out



I PREFER WORKING:

○ alone
○ with an adult
○ for a long period
○ with a friend
○ in a group
○ for a short period
○ in the morning
○ in the afternoon
○ in the evening

I PREFER SHARING BY:

○ telling about it
○ building something about it
○ acting it out
○ writing about it
○ drawing or painting about it
○ talking to other people about it

250

APPENDIX 17

LEARNING CHANNELS INVENTORY[128]

Place the numbers 1, 2 or 3 in the box after each statement that best indicates your preference.

(3 = Often, 2 = Sometimes, 1 = Seldom)

1. I can remember something best if I say it aloud. ☐
2. I prefer to follow written instructions rather than oral ones. ☐
3. When studying, I like to chew gum, snack and/or play with something. ☐
4. I remember things best when I see them written out. ☐
5. I prefer to learn through simulations, games and/or role playing. ☐
6. I enjoy learning by having someone explain things to me. ☐
7. I learn best from pictures, diagrams and charts. ☐
8. I enjoy working with my hands. ☐
9. I enjoy reading and I read quickly. ☐
10. I prefer to listen to the news on the radio rather than read it in the newspaper. ☐
11. I enjoy being near others. (I enjoy hugs, handshakes and touches.) ☐
12. I listen to the radio, tapes and recordings. ☐
13. When asked to spell a word, I simply see the word in my mind's eye. ☐
14. When learning new material, I find myself sketching, drawing and doodling. ☐
15. When I read silently, I say every word to myself. ☐

In order to get an indication of your learning preference, please add the numbers in the boxes together for the following statements.

Visual Preference Score	2 ☐	4 ☐	7 ☐	9 ☐	13 ☐	= Total ______
Auditory Preference Score	1 ☐	6 ☐	10 ☐	12 ☐	15 ☐	= Total ______
K/T (Kinesthetic/Tactual) Score	3 ☐	5 ☐	8 ☐	11 ☐	14 ☐	= Total ______

The highest score indicates that my learning preference is ______________________

Now that I know which is my dominant learning style I can learn better by ______________

APPENDIX 18

LEARNING STYLES: TEACHER OBSERVATION CHECKLIST[129]

Sound:

- ____ Does quality work during quiet work time
- ____ Does quality work during regular work time
- ____ Does quality work with music in background
- ____ Complains when there is too much sound
- ____ Has difficulty remaining quiet during quiet work time
- ____ Makes sounds or noises while working
- ____ Reminds others to be quiet while working

Classroom Design:

- ____ Has difficulty sitting properly
- ____ Enjoys lying down while listening to stories
- ____ Sits correctly during work periods
- ____ Stands by work area during work periods

Structure:

- ____ Likes to complete projects independently
- ____ Likes to complete projects step by step
- ____ Keeps work area neat
- ____ Tends to misplace supplies

Social Tendencies:

- ____ Likes to work or play with a group
- ____ Likes to work or play with a teacher nearby
- ____ Likes to work or play alone
- ____ Creates opportunities to visit with teachers

Responsibility and Persistence:

- ____ Completes projects quickly and neatly
- ____ Completes projects quickly but not neatly
- ____ Completes projects slowly and neatly
- ____ Completes projects slowly but not neatly
- ____ Does not always complete projects
- ____ Works best when given specific instructions
- ____ Cleans up work area on completing task
- ____ Needs reminding to clean up work area
- ____ Is easily distracted while working on a project
- ____ Remembers assignments

Mobility:

- ____ Leaves chair frequently during work periods
- ____ Often makes excuses to move around the classroom
- ____ Is extremely active during free play periods

Motivation:

- ____ Works best with much assurance from others
- ____ Needs teacher feedback while working
- ____ Works best when allowed to be creative
- ____ Initiates projects
- ____ Volunteers information about projects and discussion topics

Perception:

- ____ Enjoys books and filmstrips
- ____ Is attentive during story time
- ____ Likes to hear records or tapes during work time
- ____ Remembers what others say
- ____ Likes to visit classmates
- ____ Enjoys playing with toys with small pieces
- ____ Likes to draw or doodle
- ____ Likes to move around during work or play
- ____ Likes to create and react to play situations

APPENDIX 19

MODALITIES: SOME APPLICATIONS[130]

One of the ways teachers can begin to accommodate learning differences is by planning lessons/units to accommodate the different ways students learn.

Think about a skill, concept or process you will teach during the coming week and complete the following.

1. a. Identify and record what the intended learning will be.

   b. Write out an objective for your intended learning.

2. a. Briefly explain how you will introduce your lesson.

   b. Go back and look at your introduction. Did you accommodate visual, auditory and kinesthetic learning modalities equally? If not, prepare what you might say or do to adjust your introduction.

3. Brainstorm for activities you will include in your lesson to accommodate a variety of learning modalities.

Visual Activities	Auditory Activities	Kinesthetic Activities

4. Generate alternative ways to evaluate for modality accommodation within your lesson.

Visual Evaluation	Auditory Evaluation	Kinesthetic Evaluation

APPENDIX 20

TIPS FOR PARENTS[131]

GENERAL TIPS

Parents are valuable members of the IPP team. The following tips may enhance your participation in your child's educational program:

☐ maintain ongoing contact with the school

☐ take an active role in decision making

☐ ask about other parents who may be in a similar situation: they can be a valuable resource

☐ ask about the services and resources available.

TIPS FOR PARTICIPATING IN THE IPP PROCESS

Before the meeting:

☐ find out in advance what the agenda is

☐ discuss your child's involvement in the process

☐ jot down your comments and questions in advance

☐ think about your goals and expectations for your child.

At the meeting:

☐ make time limits known if you have other commitments

☐ provide samples of your child's work done at home if you think they could be useful

☐ ask questions if anything is unclear to you

☐ ask how you can help achieve some of these goals at home.

NOTES

APPENDIX 21

WHAT DO YOU CONSIDER IMPORTANT ABOUT SCHOOL CONTACTS?[132]

Parents have different ideas about the kind and amount of information about their child they want from school. The list below contains ways you and your child's teacher might communicate. Please circle a number to show how important each type of contact is to you. Then place the numbers 1, 2 or 3 next to the three ways you would most prefer to communicate with your child's teacher.

	Not applicable	Not important					Very important	Rank
Written notes	0	1	2	3	4	5	6	____
School newsletters	0	1	2	3	4	5	6	____
Parent/teacher/student conferences or IPP meetings	0	1	2	3	4	5	6	____
Open house/student-led conferences	0	1	2	3	4	5	6	____
Informal contacts	0	1	2	3	4	5	6	____
School council meetings	0	1	2	3	4	5	6	____
Classroom observation	0	1	2	3	4	5	6	____
Telephone calls	0	1	2	3	4	5	6	____
Other (please specify): ____	0	1	2	3	4	5	6	____

How much contact do you want to have with your child's teacher?

☐ Daily ☐ Once a week ☐ Once a month

☐ Once a semester ☐ Other (specify) ____________________

Would you prefer

☐ to initiate most of the contacts with your child's teacher?

☐ the teacher to initiate contacts with you?

☐ both?

APPENDIX 22

IPP — STUDENT PLAN[133]

Name: Teacher:

Date: Grade/Class: School:

Based on the student profile, check the planning options below that will be part of the student's individualized program plan.

Appropriate Learning Levels

- ☐ Acceleration
- ☐ Telescoping
- ☐ Compacting

Enrichment Opportunities

- ☐ Exploration activities
- ☐ Thinking, research and planning skills
- ☐ Individual study option

Curriculum Differentiation

- ☐ Content
- ☐ Processes
- ☐ Products

Other

- ☐ Special programs
- ☐ Mentoring
- ☐ Apprenticeship

What are the intended student outcomes?

How will the outcomes be assessed?

Criteria for evaluation of outcomes (set with student).

Members of planning team:

Review Date:

APPENDIX 23

THE CROSSOVER PROFILE[134]

Recognizing that no one student will fit the complete list, the composite consists of both gifted and LD characteristics.

Like other gifted students, the typical crossover student will:

- intellectually approach or reach the gifted range (in this group, 120 IQ or above Full Scale IQ; 130 IQ or above in the strongest factor, Verbal Comprehension or Perceptual Organization using Wechsler scores)
- have more interest and ability in pursuing broad-based, thematic topics than in remembering and dealing with details. ". . . the harder the task, the better they do; it's the easy work they can't master" (Silverman, 1989).
- be somewhat more of an intuitive dreamer than a practically oriented thinker; creativity or problem-solving ability may be exhibited in a specific area of interest
- exhibit a sophisticated sense of humour
- visualize well and do well in areas requiring this ability; e.g., mathematics, especially geometry; art
- be highly sensitive and base decisions on personal feeling and human need rather than on logic as a young child, but may become more logical in adolescence
- have a high readiness to learn and a great interest in learning when topics are presented in a challenging manner.

Like students of average ability with learning disabilities, the typical crossover student will:

- have an uneven intellectual pattern on the Wechsler Intelligence Tests with verbal comprehension and perceptual organization scores superior to those tapping attentional or sequencing abilities
- have an uneven academic pattern with strengths most likely in mathematics or content areas and weaknesses in the language arts areas — especially written language — but variations exist
- have written language difficulties including poor handwriting, poor mechanics and difficulty organizing content
- need remediation for skills deficits (but will respond better to teaching in context than to isolated skill building)
- be distractible in large groups and have difficulty completing work because of that distractibility
- have difficulty organizing time and materials, often resulting in forgetting or incompletion of homework or need of excessive time for completion
- need medical monitoring because he or she may benefit from medication and/or behavioural intervention for ADHD
- need more time to process language and respond than would be expected of someone with high intellectual capabilities
- lack some social skills and common sense decision-making ability
- sometimes exhibit visual or auditory perceptual deficits or unusual visual sensitivity to light
- be less successful when confronted with input from multiple sources or with tasks that require the integration of multiple skills.

APPENDIX 24

FACULTY/ADMINISTRATOR NOMINATION FORM FOR ARTISTICALLY GIFTED AND TALENTED STUDENTS[135]

As you read the characteristics below, list the names of those students who first come to mind. A student may be named more than once.

1. Students who show interest in a particular art form.
2. Students who spend time pursuing an art form.
3. Students who demonstrate good fine motor or gross motor co-ordination.
4. Students who have good memory, unusual ability to store and use information.
5. Students who are willing to try new activities.
6. Students who follow through on work that initially excites them.
7. Students who can express feelings in/through an art form.
8. Students who are keen observers, sensitive to their environment, see the unusual and what others may overlook.
9. Students who create unique responses to given stimuli.
10. Students who can elaborate and extend the ideas of others.

VISUAL ARTS	DRAMA	MUSIC	DANCE

Faculty/Administrator

Date

COMMENTS:

APPENDIX 25

STUDENT NOMINATION FORM[136]
WHAT DO YOU KNOW ABOUT YOUR CLASSMATES?

Please write down the name of the classmate you would choose for each item. The classmate does not have to be someone in the class you are in now; he or she may be someone in one of your other classes. You can name a person more than once or a different person for each item.

1. Twenty years from now, who do you think will be a famous . . .

    a) actor ________________________________

    b) artist ________________________________

    c) dancer ________________________________

    d) musician ________________________________

2. Who likes to create plays?

3. Who always is willing to try something new?

4. Who has the most unusual ideas?

5. Who enjoys sketching?

6. Who enjoys role playing?

7. Who enjoys creative movement?

APPENDIX 26

SELF-NOMINATION FORM FOR ARTISTICALLY GIFTED AND TALENTED STUDENTS[137]

Student Name

Grade School District

Parent(s) Name

Address

Date

Our school plans to offer challenging studies for artistically gifted and talented students. If you would like to be considered for participation, please answer the following.

1. Have you had an exciting experience in dance, drama, music or visual arts? Describe the event. Describe how you felt about the experience.

2. What would you like to learn in these special studies?

3. What lessons and activities do you participate in after school?

INTERVIEW[138]
GRADES 1–12

The interview provides insights that can be ascertained only through interaction. This permits the adjudicator to use professional judgment during the evaluation.

It is necessary to adopt a friendly, relaxed and helpful posture to applicants who are likely to be nervous and unable to demonstrate their best effort. The student auditioning at the end of the day is entitled to the same degree of attention given the student who appeared first in the morning. In all fairness to the applicants, each should be shown the same degree of attention and consideration in addition to the full allotment of interview time.

Never say anything to an applicant that may lead to a presumption of acceptance or rejection. Ideally an adjudicator's demeanour should be supportive and there should be no comments that predict an outcome.

It is wise not to discuss anything about audition requirements, standards or criteria with students, their families or other interested parties.

Adjudicators should arrive sufficiently ahead of the first scheduled audition to have time to go over preliminaries. On each applicant's visual arts interview rating sheet, indicate the score, together with at least one important comment which served as a basis for the evaluation.

During the interview, a directive approach (a predetermined set of questions) should be combined with a non-directive approach, which allows occasional deviation.

It is recommended that two categories of questions be developed. One category should have four questions dealing with knowledge and skills of the art area. This category should be rated on a point system. The other category should have six questions that cover attitudes about the area. It should be rated on a four-point scale from below average (1) to outstanding (4).

During the interview, the committee should discuss with the student his or her school, individual and/or community-related activities.

APPENDIX 28

VISUAL ARTS AUDITION RATING SHEET[139]
FINAL SCREENING
GRADES 1–6

Student ____________________

Grade __________ School ____________________ District __________

Code __________ Date ____________________

District Committee Chairman ____________________

This form is to be used in rating visual arts samples.

ORIGINALITY
The student has represented an imaginary subject or has combined real forms in an imaginative way. Rate the sample from lowest (1) to highest (4). ______

COMPOSITION
For each item below, rate the product. Average = 1 or Above Average = 2

Balance: The shapes, lines, colours and forms are balanced symmetrically or asymmetrically. ______

Rhythm: Shapes, lines, colours and forms repeat or contrast with one another to create movement or stability, unity and variety. ______

Colour: Colours create interest through harmony, repetition and contrast. Colour usage is well-balanced. ______

Line: Line quality is varied and appropriate for representation of the subject. ______

Texture: Texture has been created using a variety of techniques. ______

EXPRESSIVE QUALITY
The artwork communicates a personal response to the subject selected. Rate the sample from lowest (1) to highest (4). ______

ELABORATION
The student includes many details which elaborate upon the theme and add interest. Rate the sample from lowest (1) to highest (4). ______

OVERALL IMPRESSION — Rate the sample from lowest (1) to highest (4). ______

TOTAL ______

272

APPENDIX 29

DRAMA AUDITION[140]
FINAL SCREENING
GRADES 1–3

The audition contains two tasks. These tasks should be rated by the district committee.

The rating sheet below is provided to record the student's score.

TASK ONE

Illustrate an interpretation of a particular person going through a specific action.
(Example: A small child playing with a ball.)

TASK TWO

Have the child tell a favourite story.

RATING SHEET

Student

Grade School District

Code Date

Committee Chairman

This form is to be used in rating tasks. Each item listed below should be rated on a four-point scale.

Rate 1 ------------------------ 4
Lowest Highest

TASK ONE

Creativity
Movement
Originality
Projection
Use of Detail

TASK TWO

Articulation
Characterization
Creativity
Expression
Projection

TOTAL

APPENDIX 30

DRAMA AUDITION[141]
FINAL SCREENING
GRADES 4–6

The audition contains two tasks. These tasks should be rated by the district committee.

The rating sheet below is provided to record the student's score.

TASK ONE

Illustrate an interpretation of a particular person going through a specific action.
(Example: A very old person walking.)

TASK TWO

Give a memorized presentation of approximately one minute.

RATING SHEET

Student ____________________________

Grade __________ School __________________ District __________________

Code __________ Date ____________________________

Committee Chairman ____________________________

This form is to be used in rating tasks. Each item listed below should be rated on a four-point scale.

Rate 1 ------------------------ 4
Lowest Highest

TASK ONE

Characterization __________ Movement __________

Creativity __________ Projection __________

TASK TWO

Articulation __________ Projection __________

Expression __________

TOTAL __________

APPENDIX 31

DRAMA AUDITION[142]
SPECIFIC SCREENING RATING SHEET
GRADES 7–12

Student ______________________________

Grade __________ School __________ District __________

Code __________ Date __________

Committee Chairman ______________________________

This form is to be used in rating drama tasks. Each item listed below should be rated on a four-point scale.

Rate 1 -------------------- 4
Lowest Highest

MONOLOGUE ONE

Articulation __________
Characterization __________
Creativity __________
Expression __________
Originality __________
Projection __________

MONOLOGUE TWO

Articulation __________
Characterization __________
Creativity __________
Expression __________
Originality __________
Projection __________

TOTAL __________

APPENDIX 32

DRAMA AUDITION
FINAL SCREENING[143]
GRADES 7–12

The audition contains three tasks. These tasks should be rated by the district committee.

A rating sheet is provided to record the student's score.

TASK ONE

Each student will come prepared with two, 1–2 minute monologues of contrasting styles by two different authors (monologues should not exceed two minutes). Participants will use the monologues prepared for specific screening.

TASK TWO

Each student will improvise a 1–2 minute monologue/narrative.

TASK THREE

Each student will come prepared to create a 30-second mimicry of a person, an animal or a character.

APPENDIX 33

GILBERT'S CONCEPTS AND DESCRIPTORS[144]

Use these charts as models for posters in the studio. Choose concepts and words to fit the curriculum.

The Concept of Space

Place	self space (personal space), general space (room space)
Size	big (far reach), medium (mid-reach), small (near reach)
Level	high, middle, low
Direction	forward, backward, right, left, up, down
Pathway	curved, straight, zig zag
Focus	single focus, multi-focus

The Concept of Time

Speed	fast, medium, slow
Rhythm	pulse, pattern, breath, accent

The Concept of Force

Energy	sharp (sudden), smooth (sustained)
Weight	strong, light
Flow	free (continuous, off-balance), bound (controlled, on-balance)

The Concept of Body

Parts	head, neck, shoulders, arms, wrists, elbows, hands, fingers, pelvis, trunk, spine, legs, knees, feet, toes, heels, etc.
Relationships	near, far, around, through, above, below, beside, between, in, out, on, off, together, apart, alone, connected, mirror, shadow
Shapes	curved, straight, angular, twisted, symmetrical, asymmetrical
Balance	off-balance, on-balance

The Concept of Movement

Locomotor	walk, run, leap, jump, hop, gallop, slide, skip, crawl, roll, waltz run, step-hop, schottische, two-step, grapevine, polka, etc.
Nonlocomotor	bend, twist, stretch, swing, push, pull, fall, melt, sway, turn, spin, dodge, kick, poke, lift, carve, curl, lunge, wiggle, swirl, slash, punch, flick, dab, float, glide, press, wring, etc.

The Concept of Form

Recurring theme	theme in variation, cannon, round repetition
ABA	A = one phrase or idea, B = a different phrase or idea
Abstract	nonrepresentational, geometric form
Narrative	in the form of a story, representational
Suite	three sections: moderate beginning, slow centre, fast ending
Broken Form	unrelated ideas, often used for humour

APPENDIX 34

HANKIN'S BASIC MOVEMENT CONCEPTS[148]

Body

Body Parts:
- Head – eyes, nose, ears, mouth
- Trunk – pelvis, chest, spine
- Limbs – feet, legs, knees, hands, arms, elbows

Some things body parts can do:
- Move in isolation or in concert with one or more parts
- Lead the rest of the body through space
- Doodle (draw designs in the air with selected parts)
- Move through a range of motion (flexion, extension, rotation, ab/abduction)
- Support the weight of the body (on the hands, on the seat, on the hands and feet, etc.)

Space

Range
- near – far
- large – small

Direction
- up – down
- forward – back
- side – side
- diagonal

Floor Patterns
- straight
- curved
- zig zag
- figure eight

Body Shape
- narrow – wide
- big – small
- folded – unfolded
- rounded – angular

Volume
- Creating the illusion of 3-D in space

Quality

controlled – free

forceful – delicate – heavy

slow – fast

sharp – smooth

A few familiar words that suggest movement quality:

swinging
undulating
melting
shivering
floating
yawning
twitching
pressing
punching
falling
rushing
lingering
wriggling

APPENDIX 35

RUBRICS USED TO ASSESS AND EVALUATE DANCE PRODUCT[146]

DESIGN

5	Special attention has been paid to spatial patterns, levels, phrasing and dynamics with respect to the relationship of the dancers to each other and their environment. Excellent use of movement sequences create a well-defined visual composition.
4	The composition shows effective use of spatial patterns, levels, phrasing and dynamics. Movement sequences flow well together and create a unified final product.
3	Good use of spatial patterns and levels. Awareness of dynamics, phrasing and flow of movement sequences is demonstrated.
2	The work shows an understanding of the concepts of design, such as levels, patterns, use of space and flow of movement. Attention must be paid to detail in the final presentation.
1	There is evidence of flow of movement, awareness of stage space, use of levels and spatial patterns. More planning and preparation time is needed to create the final product.

PERFORMANCE AND PRESENTATION

5	The presentation is exciting to watch. Through special attention to expression, focus and mood, audience attention is engaged and sustained during the performance.
4	The presentation is polished and effective. Expression, focus and mood entertain the audience and convey the meaning of the work.
3	The presentation is entertaining and well-rehearsed. Evidence of attention to mood and expression are demonstrated.
2	The presentation is complete. There is some evidence of mood and expression portrayed in the work. The group needs to focus and clearly establish their connection with the audience.
1	More rehearsal time is necessary to create the final product. Movement is tentative. It is important to develop a sense of confidence and security for the performer and the audience, so as to perform convincingly.

TECHNIQUE

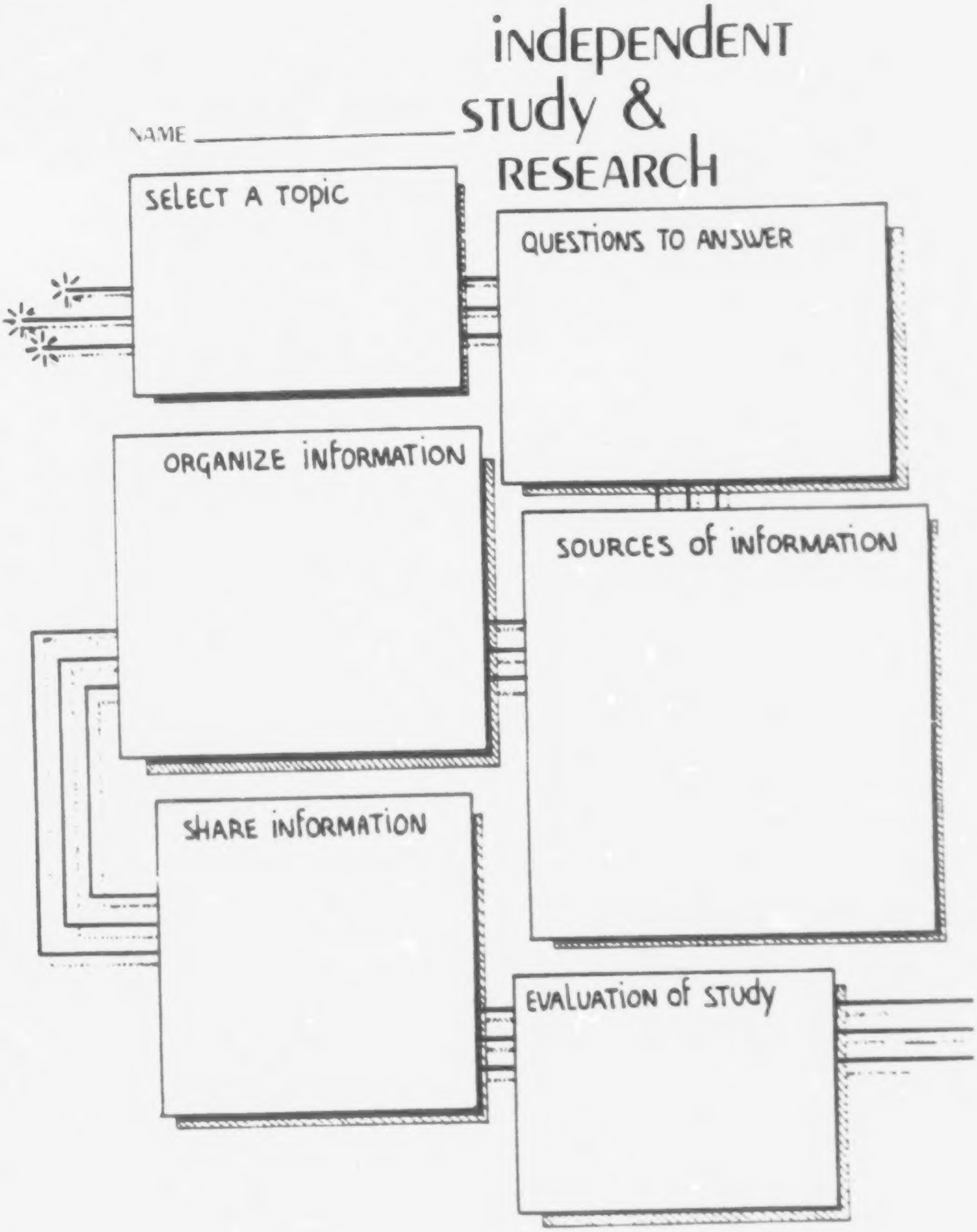
5	The performers clearly demonstrate strong mastery of dance technique and style. All steps demonstrate excellent body awareness and control of movement. All steps are performed with energy and dynamics.
4	The performers demonstrate good dance technique and style. All steps show evidence of body awareness and control. The performers are attempting challenging work to improve their dance style and technique.
3	Most steps show evidence of body awareness and control. Consistent effort is demonstrated throughout the composition.
2	Awareness of style and control of movement is developing. Some steps show evidence of body awareness and technical progress. Continue to work on performing steps with sustained energy throughout the composition.
1	There is evidence of an understanding of dance technique. More rehearsal time is needed to master the style and control of the steps.

CREATIVITY/ORIGINALITY

5	The theme is innovative and original. The composition expresses imagination and creativity.
4	The composition displays imagination, creativity and a commitment to the style of the music. Theme is clearly expressed.
3	The dancers are attempting challenging work. Original ideas are shown. Theme and style are evident throughout the composition.
2	Moments of cohesiveness between style and theme are displayed in the work. Connecting movements show continuity. Continue to work on developing original ideas.
1	Further exploration of creative ideas is encouraged. Pay careful attention to the development of a theme in your composition.

APPENDIX 36

INDEPENDENT STUDY AND RESEARCH[147]

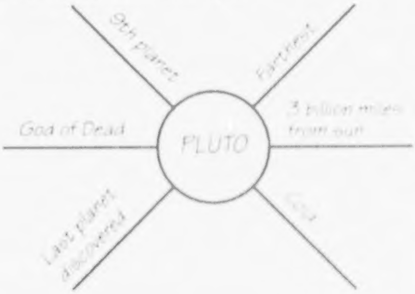

independent study & RESEARCH
NAME
SELECT A TOPIC
QUESTIONS TO ANSWER
ORGANIZE INFORMATION
SOURCES of INFORMATION
SHARE INFORMATION
EVALUATION of STUDY

APPENDIX 37

STUDENT PROJECTS[148]

For primary students:

- Draw or trace pictures that represent learning onto transparencies. Narrate information to listeners as your pictures are shown.
- Use a graphic map or chart that the teacher has used in other settings. Examples: story map, character chart, advance organizer.
- Survey others; transfer your data to a chart or graph.
- Create a game for others to play to learn the same information.
- Create a mobile, diorama, display or other visual representation of your data.
- Create dictionaries for specific topics or translate words into another language.
- Draw attribute webs. Write brief topic ideas on the spokes of the web. Example:



For students in all other grades:

- Choose an idea from the primary section above.
- Make a filmstrip on blank filmstrip material; narrate.
- Create a puppet show and present it.
- Create a radio or television broadcast or video production.
- Hold a panel discussion, round-robin discussion or debate.
- Write a diary or journal of an important historical event or person; write a speech a person might have made at the time.
- Create a timeline of events: personal, historical, social, etc.
- Working with several other students, create a panel discussion about a topic of a certain historical time period or about how different historical figures might react to a current problem.
- Create an invention to fill a personal or social need.
- Present biographical information dressed as the person investigated.
- Write a song, rap, poem, story, advertisement or jingle.
- Create a travel brochure for another country or planet.
- Create an imaginary country from papier-mâché. Locate essential features.
- Make a model; describe its parts and the functions of each.
- Create a chart or poster to represent synthesis of information.
- Write a script for a play or mock trial.
- Write a journal of time spent and activities completed with a mentor in the community.
- Collect materials from a lobbying or public service agency; summarize information. (TIP: Use the *Encyclopedia of Associations* found in the reference section of most public libraries.)
- Write to people in other places about specific topics; synthesize their responses.
- Create a learning centre for teachers to use in their classrooms.
- Rewrite a story, setting it in another time period, after researching probable differences.
- Gather political cartoons from several sources; analyze the cartoonists' ideas.
- Critique a film, book, television show or video program; write an editorial and send it to your local newspaper.
- Write a how-to manual for those who need instruction on how to do or use something.
- Contact publishers to find out how to get something you've written published.
- Come up with your own ideas.

APPENDIX 38

TOPIC SUGGESTIONS[149]

The following list represents a multitude of starting points for study by your students. Each topic can extend into other fields depending on the interests and abilities of the student. Use these suggestions when looking for new and different challenges for exploration.

Possible Topics

advertising
agriculture
air
airplanes
animals
anthropology
archaeology
architecture
art
astronomy
atoms
automobiles

babies
balloons
banking
biology
boats
books
bottling
Braille
bugs
buildings

cartooning/comics
castles
chemistry
civil wars
commerce
communication
computers
cooking
co-operation
cosmetology
countries
creativity
crime
criminology
crystology
cultures

dams
dance
death
dentistry
deserts
diaries
dinosaurs
dreams
drugs use/abuse

ecology
economics
education
electricity
electronics
energy
engineering
entertainment

fairy tales
farms
fashion
fiction
film making
food
forests
fossils
future

garbage
gender
genealogy
genetics
geography
geology
giants
gold
growth gems
gun powder
guns

handicapped
history
holidays/celebrations
holograms
humans

ice age
ice cream
ichthyology
image creation
industrial revolution
industry
instruments (music/mechanical)
inventions
inventors

jail
jewels

kinesiology
knights of castles

lakes
land
languages
lasers
law
leadership
legal system
leisure
life cycle
linguistics

magic
manufacturing
maps
mathematics
medicine
migration
military
miming
minerals
mines
money
monsters
morals
mountains
music
mythology

Native people
navigation

oceanology
oil
opera
oriental rugs
ornithology

paper
(pulp & paper)
perception
pets
philosophy
phobias
photography
physics
pirates
plants
plastics
plays
(writing & acting)
poetry
politics
pollution
poverty
power
print
psychology

railroads
religion
renaissance
retail products
revolutions
rituals
rivers
rocketry
roles
royal families

science
sculpture
seismology
shelter
sign language
signs
social system
society
space
sports
stock market
stress
surveying
swamps

technology
television
theory
thermodynamics
thinking
time
tools
transplants
transportation
travel

ultrasonics
uniforms
union
ventriloquism
Vikings
violence

walled cities
war
water
weapons
weather

x-rays

zoology

APPENDIX 39

STUDENT DAILY LOG[150]

Date: ____________________

Name: ____________________

I completed:

I must do:

Evaluation of my day:

I need:

APPENDIX 40

STUDENT-TEACHER PROJECT EVALUATION FORM[5]

Students and teachers evaluate a project. When both parties have finished the evaluation, a discussion of findings is usually beneficial.

STUDENT-TEACHER PROJECT EVALUATION FORM

Name: **Date:**

STUDENT'S EVALUATION FORM

	Circle One Choice				
	Poor	**Fair**	**Average**	**Good**	**Great**
I was pleased with my topic	1	2	3	4	5
Good choice of questions	1	2	3	4	5
I used many resources	1	2	3	4	5
I made good use of resources	1	2	3	4	5
My planning was good	1	2	3	4	5
I used time wisely	1	2	3	4	5
I presented my project	1	2	3	4	5
I shared my product with a real audience	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
Overall Evaluation	1	2	3	4	5

Knowing what I know now, the parts of this study I would change are:

I enjoyed most:

Student signature:

Check here if additional comments have been written on the back of this form.

APPENDIX 41

STUDENT-TEACHER PROJECT EVALUATION FORM[152]

STUDENT-TEACHER PROJECT EVALUATION FORM

Name:

Date:

TEACHER'S EVALUATION FORM

Circle One Choice

	Poor	Fair	Average	Good	Great
Appropriate choice of topic	1	2	3	4	5
Well-planned questions	1	2	3	4	5
Used variety of resources	1	2	3	4	5
Good use of resources	1	2	3	4	5
Planning skills	1	2	3	4	5
Use of time	1	2	3	4	5
Presentation	1	2	3	4	5
Audience Outlets	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
	1	2	3	4	5
Overall Evaluation	1	2	3	4	5

Possible changes or improvements to consider:

Particular strengths:

Teacher signature:

Check here if additional comments have been written on the back of this form.

APPENDIX 42

INDEPENDENT STUDY EVALUATION FORM[153]

Project Title:

Name: **Date:**

1. What do you like best about your project? Why?

2. What were the most difficult steps? How did you overcome these difficulties?

3. Name some new skills you learned while working on this project.

4. In what ways was your plan of action reasonable? In what ways might you have improved your plan?

5. Who else was interested in your project? With whom did you share your results? How did you do this?

6. Do you have unanswered questions about the topic? Do you have ideas for new projects?

7. Overall, how successful was your study? Write additional comments or questions on the back of this page.

APPENDIX 43

PRIMARY SELF-EVALUATION[154]

This open-ended form can be used in the primary grades for all types of activity. The student and/or teacher reads each item. The pupil draws a rating face.

PRIMARY SELF-EVALUATION

Name: ____________________ **Grade:** __________ **Date:** __________

	☺	😐	☹
How successful was I in			
identifying a topic of interest to me?			
planning my study?			
locating and utilizing a variety of resources?			
organizing my information?			
using what I learned?			
sharing my experience?			

What did I do in this experience that I've never done before?

What do I feel particularly good about?

What would I change if I could?

Did I learn anything that will help me in the future?

Other ideas I have

APPENDIX 44

INDEPENDENT STUDY CONTRACT[155]

Independent Study Contract

The following terms are agreed to by teacher and student.

____ The student may learn the key concepts or the information described on the study guide independently.

____ The student must demonstrate competency with any assessment activity in order to continue this same arrangement for the rest of this unit.

____ The student must participate in selected group activities when one day's notice is given by the teacher.

____ The student agrees to complete an independent project by ____________ (date) to share with the class.

A description of the project follows:

____

____

____

____

____

The student agrees to work on the selected project according to the following guidelines while the remainder of the class is involved with the teacher.

____

____

____

Teacher's signature: ____________________

Student's signature: ____________________

APPENDIX 45

INDEPENDENT STUDY PROJECT EVALUATION CONTRACT[156]

Independent Study Project Evaluation Contract

For a grade of "B"

1. Use secondary sources to prepare your project.
2. Use a standard format.

For a grade of "A"

1. Use primary sources (interviews, surveys, diaries, journals, etc.).
2. Really get into your topic. Produce a real-life project.
3. Present your information to an appropriate audience.
4. Use a unique presentation format. Ideas: appear as your subject, create an original filmstrip, video, etc.

Use this space to describe your project:

Teacher's signature: ______________________

Student's signature: ______________________

APPENDIX 46

LEARNING CONTRACT[157]

Learning Contract

CHAPTER: ____________

NAME: ____

✓	PAGE/CONCEPT	✓	PAGE/CONCEPT	✓	PAGE/CONCEPT

ENRICHMENT OPTIONS: ____

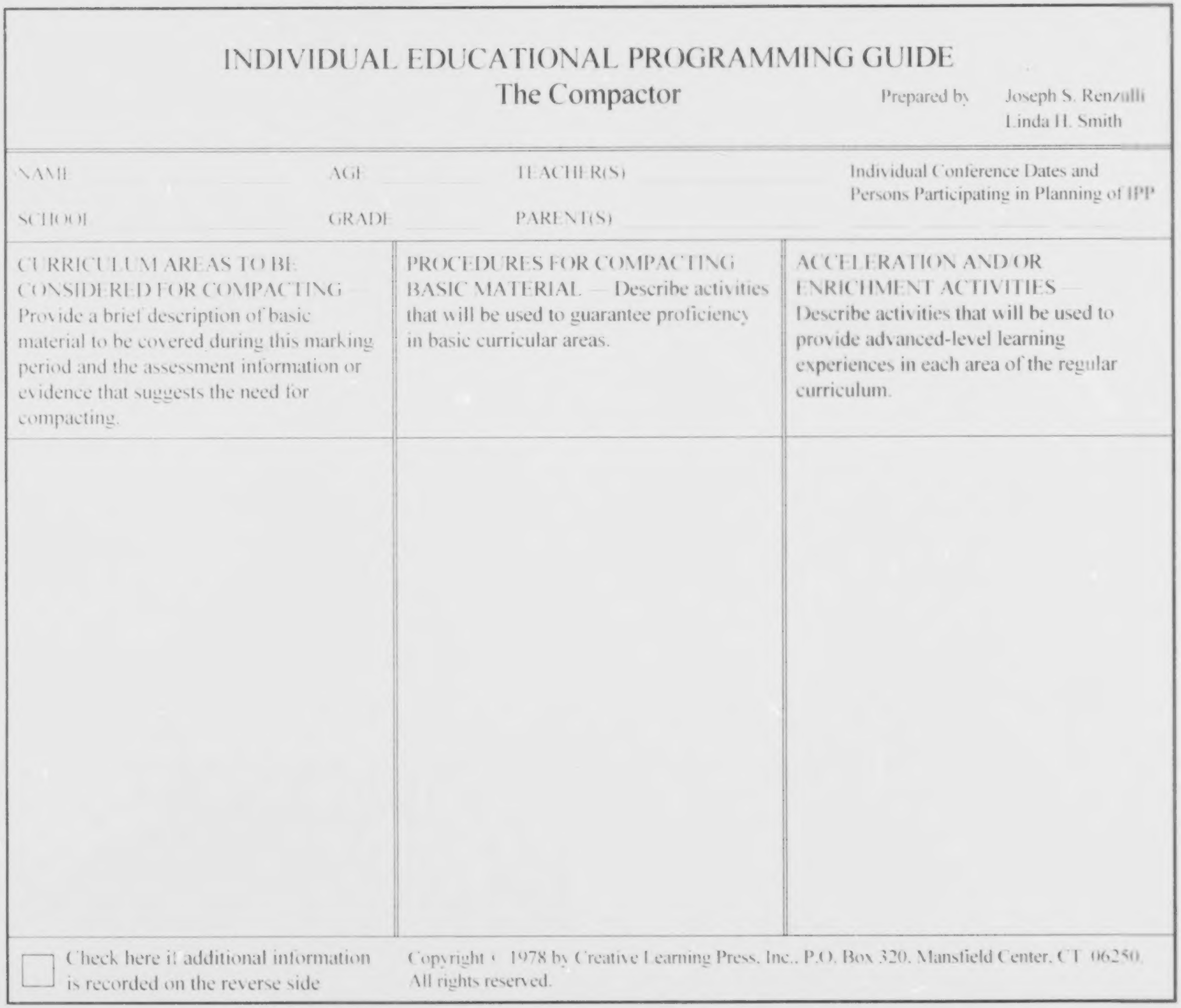
Special Instructions

YOUR IDEA:

WORKING CONDITIONS

Teacher's Signature: ____________ Student's Signature: ____________

THE COMPACTOR[138]



INDIVIDUAL EDUCATIONAL PROGRAMMING GUIDE

The Compactor

Prepared by Joseph S. Renzulli
Linda H. Smith

NAME ____ AGE ____ TEACHER(S) ____
SCHOOL ____ GRADE ____ PARENT(S) ____

Individual Conference Dates and Persons Participating in Planning of IPP

CURRICULUM AREAS TO BE CONSIDERED FOR COMPACTING — Provide a brief description of basic material to be covered during this marking period and the assessment information or evidence that suggests the need for compacting.	PROCEDURES FOR COMPACTING BASIC MATERIAL — Describe activities that will be used to guarantee proficiency in basic curricular areas.	ACCELERATION AND/OR ENRICHMENT ACTIVITIES — Describe activities that will be used to provide advanced-level learning experiences in each area of the regular curriculum.

☐ Check here if additional information is recorded on the reverse side

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APPENDIX 48

MENTORSHIP CONTRACT

Between ______________________________ (student)

and ______________________ (mentor).

Description/Objective(s) of project:

Activities planned to achieve objectives:

Product and/or potential audience for project:

Timing:

From ______________ To ______________ (expected completion date)

Meeting times:

Day ______________ Hour __________ Place ______________

We have reviewed the responsibility list that pertains to our role and agree to work within the guidelines.

Signatures:

Student ______________________ Date ____________

Mentor ______________________ Date ____________

Teacher ______________________ Date ____________

Project Co-ordinator ______________________ Date ____________

*Parent(s) ______________________ Date ____________

* The parent signature authorizes that the foregoing contract has been reviewed and permission is granted for its implementation.

SECTION 8: OTHER TEACHING RESOURCES

This listing is not to be construed as an explicit or implicit departmental approval for use of the resources listed. These titles are provided as a service only to assist school authorities to identify resources that contain potentially useful ideas. The responsibility to evaluate these resources prior to selection rests with the user, in accordance with any existing local policy.

Resources listed in this section can be ordered from the publishers. See Section 9, pages GT.288–290.

CLASSROOM STRATEGIES

Algebra magic tricks: algecadabra! (Volumes 1 and 2) (1992, 1994) by Ronald Edwards. Pacific Grove, CA: Critical Thinking Press & Software. ISBN: Volume 1: 0–89455–461–1; Volume 2: 0–89455–509–x. Grades 6–12.

Students are shown how to perform a number trick and then challenged to discover the mathematical concept behind the trick. The activities involve problem solving using algebra. It also provides suggestions for further investigations. Very challenging material.

Brainstorms and blueprints: teaching library research as a thinking process (1988) by Barbara K. Stripling & Judy M. Pitts. Englewood, CO: Libraries Unlimited Inc. ISBN 0–87287–638–1. Grades 10–12.

This book provides strategies for using higher level thinking processes to enrich research projects at the secondary level. Lesson plans are included for all steps of the research process, including analyzing, challenging, transforming and synthesizing information, and creating and presenting a final product. Also includes preparing students in the classroom and weaving the research process into the curriculum. Could be adapted for upper elementary and junior high.

The Child as critic: teaching literature in elementary and middle schools (1991) (third edition) by Glenna Davis Sloan. New York, NY: Teachers College Press. ISBN 0–8077–3156–0. ECS–Grade 12.

This book describes the use of literature to develop literacy. It describes Northrop Frye's philosophy of universal patterns of literature and how these patterns can be taught to help children become literary critics. Included are specific classroom strategies and examples, an extensive list of literary works and a "Resources for Teachers" section which will help teachers locate appropriate books for their classrooms.

Please note: Some individuals and communities may not approve of the comparison between the use of the Bible and the use of mythology. Also, the resource includes references to some issues which may be controversial; e.g., abduction, death, rape.

Creative puzzles of the world (1995) by Pieter van Delft & Jack Botermans. Berkeley, CA: Key Curriculum Press. ISBN 1-55953-116-9.
Grades 1–12.

This book contains hundreds of puzzles from all over the world, including geometric, match stick, construction, domino, string, mazes, number and logic, positioning puzzles and many more. The difficulty ranges from simple puzzles requiring only paper and pencil to complex puzzles that require hours of construction. An answer key and background information on each type of puzzle is provided.

Cultural connections: using literature to explore world cultures with children (1993) by Ron Jobe. Markham, ON: Pembroke Publishers Ltd.
ISBN 1-55138-007-2.
Grades 3–7.

This is a guide for using literature to extend or enrich students' experiences and understandings of cultures other than their own. It includes detailed summaries and bibliographies based on themes, such as war, immigration, Aboriginal peoples. It provides useful suggestions for checking cultural authenticity of literature.

Curriculum compacting: the complete guide to modifying the regular curriculum for high ability students (1992) by Sally M. Reis, Deborah E. Burns & Joseph Renzulli. Storrs, CT: Creative Learning Press, Inc. ISBN 0-936386-63-0.
ECS–Grade 12.

This book describes a procedure used to streamline the regular curriculum for students who are capable of mastering it at a faster pace. It includes the history and rationale of curriculum compacting, an overview of the procedure, record keeping and enrichment options, challenges, recommendations and questions. Each chapter contains a compacted version which summarizes the important concepts. A video and guide are also available.

Developing higher order thinking in the content areas K–12 (1993) by Frances S. O'Tuel & Ruth K. Bullard. Pacific Grove, CA: Critical Thinking Press & Software. ISBN 0-89455-499-9.
ECS–Grade 12.

This book is a basic but comprehensive overview of theories and activities for teaching higher level thinking skills. It includes a variety of models, such as Bloom's taxonomy, metacognition, problem-solving, creativity, evaluation and suggestions for planning integrated units across curriculum areas, such as social studies, language arts, etc. It also includes chapters on student research, curriculum and instruction, technology and working with parents.

Exploring texts: the role of discussion and writing in the teaching and learning of literature (1993) edited by George E. Newell & Russel K. Durst. Norwood, MA: Christopher-Gordon Publishers Inc. ISBN 0-926842-24-2.
Grades 8–12.

This book contains a number of articles dealing with literary understanding, the role of discussion, reader-response theory and using writing to assess literary understanding.

Gifted and talented children in the regular classroom (1997) by E. Paul Torrance & Dorothy A. Sisk. Buffalo, NY: Creative Education Foundation Press. ISBN 0-930222-06-7. ECS–Grade 12.

This book provides clear and concise guidelines for serving gifted and talented students in the regular classroom. It addresses the description of gifted children, their needs, methods for identifying them, and various curriculum ideas and methods for educating them. The methods of instruction are designed to involve all children, both the gifted and the non-gifted, in putting forth their best efforts and attaining their highest potential.

Imagination express series (CD-ROM). Redmond, WA: Edmark Corporation. Grades 1–6.

Students can create their own electronic books, fiction or non-fiction, by choosing backgrounds, adding characters, objects, sound effects, animation and recorded narration. A fact book contains information which can be incorporated into their work. A collection of story ideas is also provided. Text tools are available for writing and editing. Books can be printed.

Titles in the series include:

- Destination: Neighborhood
- Destination: Rainforest
- Destination: Ocean
- Destination: Castle
- Destination: Time Trip, USA
- Destination: Pyramids.

The school version includes a teacher's binder which contains a program description, technical information and cross-curricular activities.

In search of authority: an introductory guide to literary theory (1996) (second edition) by Stephen Bonnycastle. Peterborough, ON: Broadview Press. ISBN 1-55111-083-0. ECS–Grade 8.

This book is an engaging introduction to literary theory. It discusses recently developed theories in a way that makes them accessible and useful for teachers at all levels.

Infusing the teaching of critical and creative thinking into content instruction: a lesson design handbook for the elementary grades (1994) by Robert J. Swartz & Sandra Parks. Pacific Grove, CA: Critical Thinking Press & Software. ISBN 0-89455-481-6. Grades 1–6.

A comprehensive and detailed guide to the teaching of thinking skills. This resource has numerous graphic organizers that are helpful for integrating creative and critical thinking skills into the regular curriculum. Includes model lessons in many subject areas, lesson plan forms and reproducible thinking maps.

Literature and writing workshop (1992, 1993, 1994). New York, NY: Scholastic Inc. Grades 3–9.

A program of genre study and literature-based writing which includes individual and group pre- and post-reading activities, such as discussion, character analysis, story mapping. The activities challenge students to explore the specific genre in depth with emphasis on higher level thinking, such as analysis, synthesis and evaluation. Students are then challenged to emulate the elements of the genre in their own writing. Each set includes a teacher's resource guide and eight student books.

The series explores 15 genres:

- adventure fiction
  ISBN (student book) 0–590–49534–8
  ISBN (teacher guide) 0–590–49524–0
- autobiography
  ISBN (student book) 0–590–49539–9
  ISBN (teacher guide) 0–590–49529–1
- biographies
  ISBN (student book) 0–590–49294–2
  ISBN (teacher guide) 0–590–49295–0
- historical fiction
  ISBN (student book) 0–590–49300–0
  ISBN (teacher guide) 0–590–49301–9
- humourous fiction
  ISBN (student book) 0–590–49298–5
  ISBN (teacher guide) 0–590–49299–3
- lyric poetry
  ISBN (student book) 0–590–49304–3
  ISBN (teacher guide) 0–590–49305–1
- mysteries
  ISBN (student book) 0–590–49262–4
  ISBN (teacher guide) 0–590–49263–2
- myths and legends
  ISBN (student book) 0–590–49306–X
  ISBN (teacher guide) 0–590–49307–8
- narrative poetry
  ISBN (student book) 0–590–49538–0
  ISBN (teacher guide) 0–590–49528–3
- nature writing
  ISBN (student book) 0–590–49541–0
  ISBN (teacher guide) 0–590–49531–3
- newswriting
  ISBN (student book) 0–590–49535–6
  ISBN (teacher guide) 0–590–49525–9
- plays
  ISBN (student book) 0–590–49540–2
  ISBN (teacher guide) 0–590–49530–5
- realistic fiction
  ISBN (student book) 0–590–49296–9
  ISBN (teacher guide) 0–590–49297–7
- science fiction
  ISBN (student book) 0–590–49537–2
  ISBN (teacher guide) 0–590–49527–5
- tall tales
  ISBN (student book) 0–590–49536–4
  ISBN (teacher guide) 0–590–49526–7

Teachers are cautioned not to share the story "The Binnacle Boy" (*Exploring Historical Fiction* and *Investigating Mysteries*) with students unless more background information and critical thinking exercises are offered than the guide provides.

Mathematical mystery tour: higher-thinking math tasks (1988) by Mark H. Wahl.
Tucson, AZ: Zephyr Press.
ISBN 0–913705–26–8. Grades 5–12.

This collection of activities examines patterns in nature based on the mathematical principles of the fibonacci numbers and the golden ratio. The activities integrate a number of subject areas, such as history, writing, botany, astronomy and zoology. Each set of activities includes a teacher's guide which provides background notes and strategies for leading students through the activities. Suggestions are made for extension and home projects.

MayaQuest the mystery trail (CD-ROM).
Minneapolis, MN: MECC.
Grades 4–12.

Students are detectives and explorers inside the history, culture and geography of Central America. Along the trip to the Maya ruins, students use high-tech tools to solve mysteries, navigate wild bike paths and save priceless Mayan artifacts from being stolen. Based on an actual bike trek through Central America. Includes over a thousand photos, video clips, sound effects and music. Also includes interactive photography and 3-D renderings.

Multiculturalism in mathematics, science and technology: reading and activities (no year) by Thom Alcoze. Reading, MA: Addison-Wesley. ISBN 0-201-29595-4. Grades 5–12.

This resource contains readings and activities which could be used to challenge and enrich student explorations in mathematics and science beyond the regular curriculum. The 37 units focus on individuals or groups from a variety of cultures who have made significant contributions to science and mathematics.

Each unit includes a reading, questions for critical thinking, illustrations and student activities, and explorations that require higher level thinking. It also includes teacher notes and suggestions for using the units.

Operation magic tricks (1995) by Ronald Edwards. Pacific Grove, CA: Critical Thinking Press & Software. ISBN 0-89455-632-0. Grades 2–7.

Students are shown how to perform a number trick and then are challenged to discover the mathematical concept behind the trick. The activities involve problem solving and higher-level thinking as well as basic mathematical skills.

Science sleuth: 1 & 2 (CD-ROM). Minneapolis, MN: MECC. Grade 3–12.

A series of real-world science mysteries which students solve by analyzing searchable resources, conducting experiments and recording their findings in an electronic notebook. Resources include videos, articles, photos and more. Students research data, develop critical thinking and problem-solving skills.

Sim series (CD-ROM). Walnut Creek, CA: Maxis. Grades 1–12.

This series allows students to build their own communities or structures. As their creation grows, variables change and require further problem solving. Complex and challenging. Titles include:

Sim Ant — Students experience life as an ant, including fighting for queen and colony, defending the hill from predators, facing hordes of enemy ants and more. All ages.

Sim City 2000 — Students design, build and customize their own city. All ages.

Sim Copter — Students fly various missions in 30 pre-built cities, including fire fighting, chasing criminals, transporting injured Sim citizens and more. All ages.

Sim Earth — Students design and take charge of their own planet. All ages.

Sim Farm — Students create and run their own farm. All ages.

Sim Golf — Students create and compete on their own golf courses or play two built-in courses. All ages.

Sim Park — Students create and explore their own living parks filled with wildlife, plants and people. Ages 8 and up.

Sim Safari — Students create and explore their own African safari parks and camps. Ages 8 and up.

Sim Town — Students design and build their own towns. Ages 6–10.

Some of my best friends are books: guiding gifted readers from preschool to high school (1995) by Judith Wynn Halsted. Dayton, OH: Ohio Psychology Press. ISBN 0-910707-24-3. ECS-Grade 12.

Part one presents background information on the emotional and intellectual needs of gifted children. Part two describes typical reading patterns, the need for reading guidance and ways to discuss books with students. Part three is an annotated bibliography of over 300 books selected to be useful in promoting intellectual and emotional development of gifted students. Includes an extensive index.

Strategy challenges collection 1: around the world (CD-ROM). Redmond, WA: Edmark Corporation. Grades 1–12.

This CD contains three classic games from around the world: Mancala, Go-Moku and Nine Men's Morris. Each game has an on-screen demonstration that shows how to play the game, choices of various levels of difficulty and a Strategy Coach that provides tips and suggestions. The student can play against the computer or with another student. Students can also learn about the history and country of origin of the game. Good for problem solving and developing strategies.

Strategy challenges collection 2: in the wild (CD-ROM). Redmond, WA: Edmark Corporation. Grades 1–12.

This CD contains the games Jungle Chess, Srakarta and Tablut which involve both offensive and defensive strategies. Each game has an on-screen demonstration that shows how to play the game, choices of various levels of difficulty and a Strategy Coach that provides tips and suggestions. The student can play against the computer or with another student. Strategy Safari videos, text and sound describe how animals use offensive and defensive strategic behaviours to survive.

Studies in philosophy for children: Harry Stottlemeier's discovery (1991) edited by Ann Margaret Sharp & Ronald F. Reed. Philadelphia, PA: Temple University Press. ISBN 0-87722-873-6. ECS-Grade 12.

A collection of essays that discuss the development and refinement of the Philosophy for Children program and how it relates to the tradition of philosophy itself.

Teaching gifted kids in the regular classroom: strategies and techniques every teacher can use to meet the academic needs of the gifted and talented (1992) by Susan Winebrenner. Minneapolis, MN: Free Spirit Publishing Inc. ISBN 0-915793-47-4. ECS-Grade 12.

A teacher-written resource that offers a comprehensive array of strategies to use with gifted students in the regular classroom. Discusses identification, curriculum compacting, learning contracts, reading instruction and evaluation. A useful teacher-friendly guide for differentiating instruction.

Teaching young gifted children in the regular classroom: identifying, nurturing, and challenging ages 4–9 (1997) by Joan Franklin Smutny, Sally Yahnke Walker & Elizabeth A. Meckstroth. Minneapolis, MN: Free Spirit Publishing Inc. ISBN 1-57542-017-1. ECS-Grade 4.

This resource offers strategies and techniques to identify giftedness, infuse the classroom with an atmosphere of wonder, and an attitude of acceptance and understanding, recognize and teach to multiple intelligences, present the curriculum in creative and challenging ways, assess and document students' development, and build partnerships with parents and enlist their support.

Think-ercises — math & word puzzles to exercise your brain (Book 1) (1995) by Terry H. Stickels. Pacific Grove, CA: Critical Thinking Press & Software. ISBN 0–89455–633–9. Grades 3–12.

A book of puzzles and brain teasers designed to elicit divergent thinking and problem-solving strategies. Useful for challenging students to explore their own thinking processes.

Thinkin' things series (CD-ROM). Redmond, WA: Edmark Corporation. ECS–Grade 6.

This series focuses on critical thinking and problem-solving skills. The activities support multiple intelligences and are multidisciplinary. Each program offers five or six different activities, each with its own range of levels of difficulty. Students can view, listen and learn as well as create. The series includes Thinkin' Things 1, 2 and 3.

Thoughtsteps Discovering . . . Centres (1996–1999) by Karina Younk. Laval, QC: Art Image Publications (Groupe Beauchemin). Grades 4–7.

- *Discovering Wind and Water Centre*
- *Discovering Space Centre*
- *Discovering Culture and Values Centre*

These integrated learning centres may be used in the regular classroom and with gifted students. Activities are designed around themes with a social studies or science focus. Each centre includes the following components:

- Thoughtsteps Maps (similar to a menu for deciding directions)
- one Steps to Discovering . . . activity book for both students and teachers
- one Discovering . . . resource book containing stories, experiments, images, graphs relating to the themes
- two Planners (Educator's and Student's) enabling educators to plan according to learning outcomes and providing a learning portfolio for students
- one *Introduction to Thoughtsteps* (an overview of the program and the learning outcomes for each subject area).

All centre components may be purchased separately or in packages of five.

Thoughtsteps Toolbox and Evaluations (1996) by Karina Younk. Laval, QC: Art Image Publications (Groupe Beauchemin). ISBN 1–896876–02–1. Grades 4–7.

Students are given examples of processing strategies relating to metacognitive skills, communication skills (verbal, written and visual) and comprehension of subject-specific terms. Each Toolbox "how to" card has a corresponding self-evaluation form. The evaluations may be photocopied for use in the classroom.

Twists and turns and tangles in math and physics: instructional material for developing scientific and logical thinking (1994) by Samuel Katzoff. Baltimore, MD: Johns Hopkins University, Institute for the Academic Advancement of Youth. ISBN 1–881622–15–0. Grades 5–12.

A resource for junior high and high school teachers that includes a collection of complex problems and activities in mathematics and science intended to challenge gifted and talented learners. The focus is on examining ideas and experiments critically while learning problem-solving strategies. The authors suggest that the activities could be used for self-study by highly motivated students.

Up from under-achievement: how teachers, students, and parents can work together to promote student success (1991) by Diane Heacox. Minneapolis, MN: Free Spirit Publishing.
ISBN 0-915793-35-0. Grades 1–12.

This is a practical guide for assistant teachers, students and parents in developing strategies for helping students overcome underachievement. The focus of the suggestions is on parents, teachers and students working together. It includes numerous checklists, forms, contracts and planning ideas.

JOURNALS

Challenge. Boulder, CO: Good Apple, Inc.

This journal is published five times a year for parents and teachers of preschool through Grade 8. It contains reproducible activities for students, articles by scholars in gifted education, notices of upcoming events and ideas for parents.

Gifted Child Quarterly. Washington, DC: National Association for Gifted Children.

This magazine is published by the National Association for Gifted Children. It is an academic journal published quarterly which focuses on recent research in the field of gifted education. It contains book reviews, an editorial and notices of conferences.

Gifted Child Today. Waco, TX: Prufrock Press.

This bi-monthly magazine is for parents and teachers. It features articles by teachers and scholars on issues in education, classroom strategies, news briefs, product reviews, conferences and contests.

Imagine: Opportunities and Resources for Academically Talented Youth. Baltimore, MD: Johns Hopkins University Press.

A journal for students, educators and parents. It contains articles written by students and professionals that focus on careers, academics and college planning. It also includes student-created puzzles, book reviews and web sites.

Journal for the Education of the Gifted. Waco, TX: Prufrock Press.

Published quarterly. This is the official publication of the Association for the Gifted, a division of the Council for Exceptional Children. This magazine publishes original research, theoretical papers, historical perspectives, reviews of literature and descriptions of innovative programming.

Journal of Secondary Gifted Education. Waco, TX: Prufrock Press.

Published quarterly, this academic journal focuses on current research and classroom practice in secondary gifted education.

Roeper Review. Bloomfield Hills, MI: Roeper School.

A professional journal published quarterly which includes articles on issues in gifted education, such as talent development, affective dimensions of being gifted, perspectives on giftedness. Regular columns include testing, research, doctoral dissertations, professional development, programs, book reviews and parenting.

Understanding Our Gifted. Boulder, CO: Open Space Communications Inc.

Good resource for teachers, parents and counsellors. Focuses on social, emotional and intellectual needs of gifted children. Contains well-written articles on various themes, such as perfectionism, multicultural issues, gifted disabled and others. Includes regular columns on parenting, instructional strategies, book reviews, Internet sites. Editorial board consists of well-known scholars in the field of gifted education. Published quarterly.

PROFESSIONAL RESOURCES

Comprehensive curriculum for gifted learners (1993) (second edition) edited by Joyce VanTassel-Baska. Needham Heights, MA: Allyn and Bacon, Longwood Division. ISBN 0–205–15412–3.

This text provides both theory and practical applications for developing curriculum for gifted learners. It examines each of the core disciplines of verbal arts, social studies, science and mathematics as well as the areas of humanities, arts, thinking skills, affective domain and leadership.

Counseling the gifted and talented (1993) edited by Linda Kreger Silverman. Denver, CO: Love Publishing Co. ISBN 0–89108–227–1.

This text includes understanding giftedness, the counselling process, counselling in the schools and special issues. The appendix includes several bibliographies: for parents, books for children featuring gifted children, biographies for gifted students, periodicals in gifted education, and resources for counselling and assessment.

Creativity in the classroom: schools of curious delight (1995) by Alane Jordan Starko. White Plains, NY: Longman Publishers. ISBN 0–8013–1230–2. ECS–Grade 12.

This book is a practical guide for developing creativity in the classroom. The book is divided into two sections. Part one, Understanding Creative People and Processes, examines theories and models of creativity, creative persons, creativity and talent development. Part two, Creativity and Classroom Life, contains chapters on creativity in the content areas, teaching creative thinking skills, classroom organization and assessment.

Curriculum development and teaching strategies for gifted learners (1996) (second edition) by C. June Maker & Aleene B. Nielson. Austin, TX: PRO-ED. ISBN 0–89079–631–9.

Part one of this resource examines current principles of curriculum based on learning environment, content, process and product. Part two details practical applications for the elementary classroom. Includes information on differentiating the regular classroom curriculum, interdisciplinary units of study, scaffolding, multiple intelligences, problem-solving.

Education of the gifted and talented (1993) (third edition) by Gary A. Davis & Sylvia B. Rimm. Needham Heights, MA: Allyn and Bacon. ISBN 0–205–14806–9.

Thorough coverage of the main topics of gifted education, including definition of giftedness, identification, characteristics, program planning, curriculum models, acceleration, enrichment, counselling, affective learning and leadership, creativity, thinking skills, special populations of gifted, parenting and program evaluation.

Education of the gifted: programs and perspectives (1990) by Joan Franklin Smutny & Rita Haynes Blocksom. Bloomington, IN: Phi Delta Kappan Educational Foundation. ISBN 0–87367–445–6.

An introductory text which briefly covers identification of the gifted, strategies for teaching gifted, organizing the gifted program, building support for programs, pre-school gifted, gifted girls, special populations, disadvantaged and minority gifted, programs for secondary students and evaluating gifted programs. Each chapter contains a list of references for those who would like to explore the topics in more depth.

Excellence in educating gifted and talented learners (1998) (third edition) by Joyce VanTassel-Baska. Denver, CO: Love Publishing Company. ISBN 0–89108–255–7. ECS–Grade 12.

A comprehensive introduction to topics and issues in gifted and talented education. The text focuses on the nature of giftedness, special populations; i.e. girls, underachievers, handicapped, disadvantaged; identifying the gifted; developing programs; teacher training and counselling the gifted.

GIFTED: challenge and response for education (1992) by Joe Khatena. Itasca, IL: F. E. Peacock Publishers, Inc. ISBN 0–87581–349–6. ECS–Grade 12.

A comprehensive text that is a compilation of theory, research, practice and historical perspective in gifted education. Includes types of giftedness, identification, problems of gifted children, nurturing creativity, learning designs, development of gifted children.

Handbook of gifted education (1996) (second edition) by Nicholas Colangelo & Gary A. Davis. Needham Heights, MA: Allyn and Bacon. ISBN 0–205–26085–3.

A collection of writings by eminent scholars in the field of gifted education. Sections include:

- historical overview
- issues in education of the gifted
- conceptions and identification
- instructional models and practices
- creativity and thinking skills
- psychological and counselling services
- special topics including extreme precocity, gifted adolescents, ethnic and cultural issues, gifted handicapped
- the future.

Useful resource for systems and schools developing programs for gifted.

A Passion to learn (video) (1993). Vancouver, BC: Vancouver School Board.

This video profiles three elementary schools in Vancouver and their approaches to meeting the needs of gifted students. Teachers and students discuss myths of gifted education, teaching strategies, program options and the importance of meeting the needs of the gifted. Useful for professional development of teachers and presenting information to parents.

Smart teaching: nurturing talent in the classroom and beyond (1993) by Janice Leroux & Edna McMillan. Markham, ON: Pembroke Publishers Ltd. ISBN 1-55138-006-4.

A quick reference that gives brief summaries of such issues as:

- identification of high-ability students
- setting up programs
- advocacy in school and community
- models for gifted education
- evaluation.

Also includes appendices on gifted resources. A "starter" resource — abridged but good, brief descriptions of various aspects of gifted education.

Source book for creative problem-solving: a fifty year digest of proven innovation processes (1992) edited by Sidney J. Parnes. Buffalo, NY: Creative Education Foundation Press. ISBN 0-930222-922.

In the words of the editor, "this book deals with what has been learned about the deliberate systematic development of creative potential." Although this mini encyclopedia is directed to a much broader audience, teachers will find that the articles provide a balance between sound theory and practical strategies for stimulating creative thinking in the classroom. The compilation of articles is accessed through a table of contents and a detailed index.

Systems and models for developing programs for the gifted and talented (1986) edited by Joseph S. Renzulli. Storrs, CT: Creative Learning Press, Inc. ISBN 0-936386-44-4. ECS-Grade 12.

This book provides a survey of 15 well-known models developed to guide special programs for gifted students at all grade levels. It includes Renzulli's Enrichment Traid Model, Bett's Autonomous Learner Model, Kaplan's Differentiated Curriculum Model and Clark's Integrated Education Model, as well as others.

Teaching models in education of the gifted (1994) (second edition) by C. June Maker & Aleene B. Nielson. Austin, TX: PRO-ED. ISBN 0-89079-609-2.

This book provides a comprehensive examination of 13 teaching models of gifted education, including Betts, Bloom, Parnes, Renzulli, Sharon, Taylor, Treffinger and others. It compares the different models and identifies the key elements of each one, discusses how to choose an appropriate model according to program goals and how to modify and adapt the model to specific program objectives. It provides examples of teaching activities for each model.

Teaching the gifted child (1994) (fourth edition) by James J. Gallagher & Shelagh A. Gallagher. Boston, MA: Allyn and Bacon. ISBN 0-205-14828-X. ECS-Grade 12.

This is the fourth edition of this well-known comprehensive text on gifted education. Sections include definition and identification; characteristics; school adaptations; content modifications in mathematics, science, language arts, social studies and visual and performing arts; and information processing strategies.

SECTION 9: PUBLISHERS' ADDRESSES

Addison Wesley Longman Ltd.
26 Prince Andrew Place
P.O. Box 580
Don Mills, ON M3C 2T8
Telephone: (416) 447–5101
1–800–387–8028 (orders)

Allyn and Bacon
Needham Heights/Boston, MA
Canadian Distributor:
Prentice Hall Canada, Inc.
1870 Birchmount Road
Scarborough, ON M1P 2J7
Telephone: (416) 293–3621
1–800–567–3800

Art Image Publications Inc.
3281 Jean Beraud Ave.
Laval, QC H7T 2L2
Telephone: 1–800–361–2598 (English)
1–800–361–4504 (Français)

Broadview Press
Western Office
627, 604 – 1 St. S.W.
Calgary, AB T2P 1M7
Telephone: (403) 232–6863

Christopher-Gordon Publishers, Inc.
Norwood, MA
Canadian Distributor:
Irwin Publishing
325 Humber College Boulevard
Toronto, ON M9W 7C3
Telephone: (416) 798–0424
1–800–263–7824

Creative Education Foundation Press
#4, 1050 Union Road
Buffalo, NY 14224
U.S.A.
Telephone: (716) 675–3181

Creative Learning Press Inc.
Storrs, CT
Canadian Distributor:
Mind Resources Inc.
P.O. Box 126
Kitchener, ON N2G 3W9
Telephone: (519) 895–0330

Critical Thinking Press & Software
Pacific Grove, CA
Canadian Distributor:
Brijan Resources Ltd.
822 Burton Loop
Edmonton, AB T6R 2J2
Telephone: (780) 430–8305
1–800–567–1147

Edmark Corporation
Redmond, WA
Canadian Distributor:
Insight Media Centre Ltd.
10501 – 125B St.
Surrey, BC V3V 5A8
Telephone: (604) 581–2420

F. E. Peacock Publishers, Inc.
115 West Orchard
Itasca, IL 60143–1780
U.S.A.
Telephone: (630) 775–9000

Free Spirit Publishing
Minneapolis, MN
Canadian Distributor:
Monarch Books of Canada
5000 Dufferin St.
Downsview, ON M3H 5T5
Telephone: (416) 663–8231
1–800–404–7404

Good Apple, Inc.
P.O. Box 299
Carthage, IL 62321
U.S.A.
Telephone: (217) 357-3981

Johns Hopkins University Press
Center for Talented Youth
3400 North Charles St.
Baltimore, MD 21218-4319
U.S.A.
Telephone: (410) 516-0309

Key Curriculum Press
Berkeley, CA
Canadian Distributor:
Spectrum Educational Supplies Ltd.
125 Mary St.
Aurora, ON L4G 1G3
Telephone: (905) 841-0600
1-800-668-0600

Libraries Unlimited Inc.
Englewood, CO
Canadian Distributor:
International Press Publications
90 Nolan Court, #21
Markham, ON L3R 4L9
Telephone: (905) 946-9588
1-800-679-2514 (orders only)

Longman Publishers
White Plains, NY
Canadian Distributor:
Addison Wesley Longman Ltd.
26 Prince Andrew Place
P.O. Box 580
Don Mills, ON M3C 2T8
Telephone: (416) 447-5101
1-800-387-8028 (orders)

Love Publishing Co.
1777 South Bellaire St.
Denver, CO 80222
U.S.A.
Telephone: (303) 757-2579

Maxis
2121 North California Boulevard, Suite 600
Walnut Creek, CA 94596-3572
U.S.A.
Telephone: (510) 933-5630

MECC
Minneapolis, MN
Canadian Distributor:
(Core Curriculum Technologies)
CCT Software Plus
Unit 101, 3738 North Fraser Way
Burnaby, BC V5J 5K8
Telephone: (604) 419-1234
1-800-663-7731

National Association for Gifted Children
Suite 550, 1707 L St. N.W.
Washington, DC 20036
U.S.A.
Telephone: (202) 785-4268

(Ohio Psychology Press)
Gifted Psychology Press
P.O. Box 5057
Scottsdale, AZ 85261
U.S.A.
Telephone: (602) 368-7862

Open Space Communications Inc.
Suite 108, 1900 Folsom St.
Boulder, CO 80302
U.S.A.
Telephone: (303) 444-7020

Pembroke Publishers Ltd.
538 Hood Road
Markham, ON L3R 3K9
Telephone: (905) 477-0650
1-800-997-9807

Phi Delta Kappa Educational Foundation
408 North Union St.
P.O. Box 789
Bloomington, IN 47405-3800
U.S.A.
Telephone: (812) 339-1156

PRO-ED
Austin, TX
Canadian Distributor:
Mind Resources Inc.
P.O. Box 126
Kitchener, ON N2G 3W9
Telephone: (519) 895-0330

Prufrock Press
P.O. Box 8813
Waco, TX 76714-8813
U.S.A.
Telephone: 1-800-998-2208

Roeper School
P.O. Box 329
Bloomfield Hills, MI 48303
U.S.A.
Telephone: (248) 203-7320

Scholastic Canada Ltd.
123 Newkirk Road
Richmond Hill, ON L4C 3G5
Telephone: (905) 883-5300
1-800-268-3848

Teachers College Press
Williston, VT
Canadian Distributor:
Guidance Centre
712 Gordon Baker Road
Toronto, ON M2H 3R7
Telephone: (416) 502-1262
1-800-668-6247

Temple University Press
1601 North Broad St.
USB Room 305
Philadelphia, PA 19122
Telephone: 1-800-477-1656

Vancouver School Board
Distributor:
Magic Lantern Communications Ltd.
Western Office
Unit #3, 8755 Ash St.
Vancouver, BC V6P 6T3
Telephone: (604) 324-2600
1-800-263-1818

Zephyr Press
Tucson, AZ
Canadian Distributor:
Mind Resources Inc.
P.O. Box 126
Kitchener, ON N2G 3W9
Telephone: (519) 895-0330

SECTION 10: ANNOTATED TEST INVENTORY

The following annotated test inventory includes the level of training required to administer and interpret the tests. The following levels are taken from *Standards for Psycho-educational Assessment* (Alberta Education, 1994):

Level A: requires no formal training in testing
Level B: requires formal training in testing
Level C: restricted tests requiring professional qualifications.

See page GT.306 for a chart illustrating the standards of competence, level of tests and qualifications. See pages GT.307–308 for distributors' addresses. The following information was provided by the publishers.

ACHIEVEMENT

GROUP ADMINISTERED TESTS

The Brigance Diagnostic Comprehensive Inventory of Basic Skills, 1983 (CIBS)

Author: Albert H. Brigance
Publisher: Curriculum Associates Inc.
Canadian Distributor: Curriculum Associates Inc.
Description: Measures attainment of basic academic skills, used for developing IPPs and determining academic placement.
Test Scores: Grade equivalents
Population: ECS to Grade 9
Administration Time: Untimed, varies
Reliability and Validity: Not reported in test manual
Administrative Considerations: Level A, no formal training in testing required.

Canadian Tests of Basic Skills, 1995 (CTBS)

Authors: E. King-Shaw and others
Publisher: Nelson Canada
Canadian Distributor: Nelson Canada
Description: Three test levels — primary, multilevel and high school. Multiple choice, paper and pencil subtests for vocabulary, reading comprehension, spelling, capitalization, punctuation, usage, visual materials, reference materials, mathematics concepts, mathematics problem solving and mathematics computation.
Test Scores: Grade score equivalents, percentile ranks
Population: ECS to Grade 12
Administration Time: Primary – 235 minutes, Multilevel – 256 minutes, High school 160 minutes
Reliability and Validity: Moderate to very good
Administrative Considerations: Level A, no formal training in testing required.

Gates-MacGinitie Reading Tests — Second Canadian Edition, 1992

Authors: W. H. MacGinitie and R. K. MacGinitie
Publisher: Riverside Publishing Co.
Canadian Distributor: Nelson Canada
Description: Measures reading achievement in terms of vocabulary and comprehension.
Test Scores: Percentile ranks, grade equivalent scores
Population: ECS to Grade 12
Administration Time: 55–105 minutes depending on grade level of students
Reliability and Validity: Very good
Administrative Considerations: Level A, no formal training in testing required.

Orleans-Hanna Algebra Prognosis Test

Authors: Joseph B. Orleans and Gerald S. Hanna

Publisher: The Psychological Corporation

Canadian Distributor: Harcourt Canada

Description: Areas assessed include identifying those students who may be expected to experience success or difficulties in algebra.

Test Scores: Percentile ranks and stanines.

Population: Grades 8–11.

Administration Time: Untimed: approximately 50–60 minutes.

Reliability: Manual reports test-retest reliability and internal consistency.

Validity: Manual reports predictive validity.

Administrative Considerations: Level A, no formal training in testing is required.

Stanford Diagnostic Math Test — Third Edition, 1984

Authors: L. S. Beatty, R. Madden, E. F. Gardner and B. Karlsen

Publisher: The Psychological Corporation

Canadian Distributors: The Testing Materials Resource Book, Harcourt Canada

Description: Assesses number systems, numeration, computation and applications; divided into four levels with two alternate forms.

Test Scores: Percentile ranks, stanines, scaled scores, grade equivalents and progress indicators

Population: Grades 1.5–12.8

Administration Time: 85–100 minutes

Reliability and Validity: Good to very good

Administrative Considerations: Level A, no formal training in testing required.

Stanford Diagnostic Reading Test — Third Edition, 1984

Authors: B. Karlsen and E. F. Gardner

Publisher: The Psychological Corporation

Canadian Distributors: The Testing Materials Resource Book, Harcourt Canada

Description: Measures reading comprehension, reading vocabulary, reading decoding and reading rate. Divided into four levels with two equivalent forms.

Test Scores: Percentile ranks, grade equivalents

Population: Grades 1.5–12.8

Administration Time: 105–126 minutes

Reliability and Validity: Moderate to very good

Administrative Considerations: Level A, no formal training in testing required.

ACHIEVEMENT

INDIVIDUALLY ADMINISTERED TESTS

Alberta Diagnostic Mathematics Program, 1990

Author: Alberta Education

Publisher: Alberta Education

Canadian Distributor: Learning Resources Distributing Centre

Description: Five handbooks for Grades 1–3 and five for Grades 4–6. Each handbook contains evaluation strategies and follow-up instructional strategies. The titles are: numeration, operations and properties, measurement, geometry and problem solving.

Test Scores: Strong, adequate, weak ratings for grade objectives

Population: Grades 1–6

Administration Time: Untimed

Reliability and Validity: Not available

Administrative Considerations: Level A, no formal training in testing required.

Alberta Diagnostic Reading Program, 1986

Author: Alberta Education

Publisher: Alberta Education

Canadian Distributor: Learning Resources Distributing Centre

Description: Forty-eight reading passages to determine students' independent, instructional and frustration reading levels. Six evaluation strategies provided: a reading process checklist, oral reading miscues, retelling, comprehension questions, close and sentence verification. Instructional strategies provided.

Test Scores: Independent, instructional, frustration reading level

Population: Grades 1½–6

Administration Time: Untimed
Reliability and Validity: Not available
Administrative Considerations: Level A, no formal training in testing required.

Canada Quick Individual Education Test, 1990 (CANADA QUIET)

Authors: C. T. Wormelli and D. E. Carter
Publisher: Canadian Edumetrics Ltd., White Rock, B.C.
Canadian Distributor: The Testing Materials Resource Book
Description: Measures spelling, mathematics, word identification and passage comprehension.
Test Scores: Standard scores and percentiles
Population: Grades 2–12 (mathematics and word identification subtests may also be administered to Grade 1 students)
Administration Time: 30–60 minutes
Reliability and Validity: Good
Administrative Considerations: Level B, requires formal training in testing. The manual recommends administration by an examiner who passes native fluency in English.

Diagnostic Achievement Battery 2, 1990 (DAB–2)

Author: Phyllis L. Newcomer
Publisher: PRO-ED Inc.
Canadian Distributors: Multi-Health Systems Inc., Mind Resources Inc., Guidance Centre, The Testing Materials Resource Book
Description: Measures listening, reading, mathematics, speaking, writing (12 subtests).
Test Scores: Standard scores, percentile ranks
Population: 6–14 years
Administration Time: Untimed, 30–90 minutes
Reliability and Validity: Good to excellent
Administrative Considerations: Level B, requires formal training in testing, some subtests are suitable for group use.

Formal Reading Inventory 1986 (FRI)

Author: F. L. Wiederholt
Publisher: PRO-ED Inc.
Canadian Distributor: Mind Resources Inc.
Description: Assesses silent reading comprehension and oral reading miscues (meaning similarity, function similarity, graphic/phonemic similarity, multiple sources and self-correction) equivalent forms for oral and silent reading comprehension.
Test Scores: Silent reading quotient
Population: Grades 1–12
Administration Time: Untimed
Reliability and Validity: Good
Administrative Considerations: Level A, no formal training in testing required, silent reading forms suitable for group use, oral reading forms suitable for individual administration.

Gray Oral Reading Test 3, 1992 (GORT–3)

Authors: F. L. Wiederholt and B. R. Bryant
Publisher: PRO-ED Inc.
Canadian Distributors: Multi-Health Systems Inc., Mind Resources Inc., James Battle & Associates, The Testing Materials Resource Book
Description: Assesses oral reading rate, errors and comprehension. Manual provides a system for analyzing miscues.
Test Scores: Standard scores, percentile ranks, grade equivalent scores
Population: 7–18 years
Administration Time: Untimed, 20–30 minutes
Reliability and Validity: Very good
Administrative Considerations: Level B, requires formal training in testing.

Kaufman Test of Educational Achievement, 1985 (K-TEA)

Authors: Alan S. Kaufman and Nadeen L. Kaufman
Publisher: American Guidance Service
Canadian Distributors: Psycan, The Testing Materials Resource Book

Description: Assesses educational achievement. Two forms are available. The comprehensive form includes mathematics computation/applications, reading decoding/comprehension and spelling. The brief form includes reading, mathematics and spelling achievement.

Test Scores: Percentile ranks for grade and age, age and grade equivalent scores, stanines, normal curve equivalents, standard scores

Population: 6–18 years, Grades 1–12

Administration Time: Brief form 20–30 minutes, Comprehensive form 30–60 minutes

Reliability and Validity: Moderate to excellent

Administrative Considerations: Level B, requires formal training in testing.

Keymath-Revised (Canadian Edition): A Diagnostic Inventory of Essential Mathematics, 1991

Author: A. J. Connolly

Publisher: Psycan

Canadian Distributor: Psycan

Description: Consists of 13 subtests: numeration, rational numbers, geometry, addition, subtraction, multiplication, division, mental computation, measurement, time and money, estimation, interpreting data and problem solving.

Test Scores: Grade equivalent scores, standard scores, scaled scores, percentile ranks

Population: ECS to Grade 9

Administration Time: 30–50 minutes

Reliability and Validity: Very good to excellent

Administrative Considerations: Level B, requires formal training in testing.

Nelson-Denny Reading Test, 1993

Authors: J. I. Brown, V. V. Fishco and G. S. Hanna

Publisher: Riverside Publishing Co.

Canadian Distributor: Nelson Canada

Description: Assesses student achievement and progress in vocabulary, comprehension and reading rate. Two equivalent forms available.

Test Scores: Percentile ranks, grade equivalents

Population: Grades 9–12 and adults

Administration Time: 35–45 minutes

Reliability and Validity: Not available for current edition

Administrative Considerations: Level A, no formal training in testing required, also suitable for group use.

Peabody Individual Achievement Test, Revised, 1989 (PIAT-R)

Author: F. C. Markwardt, Jr.

Publisher: American Guidance Service

Canadian Distributor: Psycan

Description: Measures general information, reading recognition, reading comprehension, spelling, mathematics and written expression.

Test Scores: Percentile ranks for age and grade, grade and age equivalent scores, standard scores, stanines, normal curve equivalents

Population: ECS to Grade 12

Administration Time: 50–70 minutes

Reliability and Validity: Very good to excellent

Administrative Considerations: Level B, requires formal training in testing.

Quick-Score Achievement Test, 1987 (Q-SAT)

Authors: D. D. Hammill, J. F. Ammer, M. E. Cronin, L. H. Handelbaum and S. S. Quinby

Publisher: PRO-ED Inc.

Canadian Distributors: Mind Resources Inc., James Battle & Associates, The Testing Materials Resource Book

Description: Measures proficiency in reading, writing and mathematics, and general knowledge in science, social, health and language arts. Two equivalent forms available.

Test Scores: Standard scores, percentile scores

Population: Grades 1–12

Administration Time: 40 minutes

Reliability and Validity: Good to excellent

Administrative Considerations: Level B, requires formal training in testing.

Test of Early Mathematics Ability — Second Edition, 1990 (TEMA–2)

Authors: H. F. Ginsburg and A. J. Baroody
Publisher: PRO-ED Inc.
Canadian Distributors: Mind Resources Inc., The Testing Materials Resource Book
Description: Assesses informal mathematics: concepts of relative magnitude, counting skills, calculation: and formal mathematics: reading and writing numbers, number facts, calculation algorithms, base-10 concepts.
Test Scores: Standard scores and percentile ranks
Population: 3–8 years
Administration Time: Untimed
Reliability and Validity: Very good to excellent
Administrative Considerations: Level A, no formal training in testing required.

Test of Early Reading Ability, Second Edition, 1989 (TERA–2)

Authors: D. K. Reid, W. P. Hresko and D. D. Hammill
Publisher: PRO-ED Inc.
Canadian Distributors: Mind Resources Inc., The Testing Materials Resource Book
Description: Assesses knowledge of contextual meaning, alphabet and conventions of print. Two equivalent forms.
Test Scores: Percentile ranks, normal curve equivalents, reading quotients. All scores are based on age.
Population: 3–9 years, 11 months
Administration Time: Untimed
Reliability and Validity: Good to very good
Administrative Considerations: Level B, requires formal training in testing.

Test of Early Written Language, 1988 (TEWL)

Author: W. P. Hresko
Publisher: PRO-ED Inc.
Canadian Distributors: Mind Resources Inc., James Battle & Associates, The Testing Materials Resource Book
Description: Assesses emerging written language skills of young children.
Test Scores: Standard scores, percentile ranks. All scores are based on age.
Population: 3–7 years
Administration Time: Untimed, 10–30 minutes
Reliability and Validity: Good to very good
Administrative Considerations: Level B, requires formal training in testing.

Test of Mathematical Abilities – Second Edition, 1994 (TOMA–2)

Authors: V. L. Brown, M. E. Cronin and E. McEntire
Publisher: PRO-ED Inc.
Canadian Distributors: James Battle & Associates, The Testing Materials Resource Book
Description: Measures mathematical ability in five areas: vocabulary, computation, general information, story problems and attitude toward mathematics.
Test Scores: Standard scores and percentile ranks
Population: 8–18 years, 11 months
Administration Time: 120–130 minutes
Reliability and Validity: Moderate to very good
Administrative Considerations: Level B, requires formal training in testing; also suitable for group use.

The Test of Reading Comprehension, Revised Edition, 1986 (TORC)

Authors: V. L. Brown, D. D. Hammill and J. L. Wiederholt
Publisher: PRO-ED, Inc.
Canadian Distributors: Mind Resources Inc., James Battle & Associates, Guidance Centre, The Testing Materials Resource Book, Psycan
Description: Assesses general vocabulary, syntactic similarities, paragraph reading, sentence sequencing, mathematics vocabulary, social studies vocabulary, science vocabulary and reading directions of school work.
Test Scores: Reading comprehension quotient, standard scores for each subtest, percentile ranks. All scores are based on age.
Population: Grades 2–12
Administration Time: Untimed; approximately 105 minutes

Reliability and Validity: Very good to excellent
Administrative Considerations: Level B, requires formal training in testing.

Test of Written Language — Second Edition, 1988 (TOWL–2)

Authors: D. D. Hammill and S. C. Larsen
Publisher: PRO-ED Inc.
Canadian Distributors: Mind Resources Inc., Guidance Centre, The Testing Materials Resource Book
Description: Assesses written language areas: thematic maturity, contextual vocabulary, syntactic maturity, contextual spelling, contextual style, vocabulary, style and spelling, logical sentences and sentence combining. Two alternate forms provided.
Test Scores: Standard scores, percentile scores
Population: Grades 2–12, 7–17 years
Administration Time: Untimed except 15 minute limit for story composition
Reliability and Validity: Moderate to very good
Administrative Considerations: Level B, requires formal training in testing; also suitable for group use.

Test of Written Spelling — Third Edition, 1994 (TWS–3)

Authors: S. C. Larsen and D. D. Hammill
Publisher: PRO-ED Inc
Canadian Distributor: James Battle & Associates
Description: Measures students' spelling abilities for words easily predictable by their sound and for more irregular words.
Test Scores: Standard scores, percentile ranks
Population: Grades 1–12
Administration Time: Untimed; approximately 20 minutes
Reliability and Validity: Very good to excellent
Administrative Considerations: Level B, requires formal training in testing, also suitable for group use.

Weschler Individual Achievement Test, 1992 (WIAT)

Author: The Psychological Corporation
Publisher: The Psychological Corporation
Canadian Distributors: The Testing Materials Resource Book, Harcourt Canada
Description: Measures basic reading, reading comprehension, total reading, mathematical reasoning, numerical operations, total mathematics, listening comprehension, oral expression, total language, spelling, written expression, total writing.
Test Scores: Standard scores, percentile ranks, grade and age, equivalent scores, stanines, normal curve equivalents
Population: 5–19 years
Administration Time: Untimed, 30–75 minutes
Reliability and Validity: Very good to excellent
Administrative Considerations: Level B, requires formal training in testing.

Wide Range Achievement Test, 1993 (WRAT–3)

Author: J. S. Wilkinson
Publisher: Jastak Associates/Wide-Range Inc.
Canadian Distributors: James Battle & Associates, Guidance Centre, The Testing Materials Resource Book
Description: Assesses basic reading, spelling and mathematics skills with two alternative test forms.
Test Scores: Standard scores, percentile ranks, grade equivalent scores
Population: 5–75 years
Administration Time: 15–30 minutes
Reliability and Validity: Very good (validity not addressed fully)
Administrative Considerations: Level B, requires formal training in testing, also suitable for group use.

Woodcock-Johnson Psycho-Educational Battery-Revised, 1991 (WJ-R); Test of Achievement

Authors: Richard W. Woodcock and M. Bonner Johnson
Publisher: The Riverside Publishing Company
Canadian Distributor: Nelson Canada

Description: In terms of achievement, a broad reading, mathematics, written language and knowledge score are provided. The broad reading score includes letter-word identification, passage comprehension, word attack and reading vocabulary. Calculation, applied problems and quantitative concepts make up the broad mathematics score. The broad written language score includes dictation, writing samples, proofing, writing fluency, punctuation and capitalization, spelling and usage. Science, social studies and humanities make up the broad knowledge score.

Test Scores: Cluster scores, average age scores, percentile ranks

Population: 2–90 years

Administration Time: 30–40 minutes for the Standard battery, an additional 40 minutes for the Supplemental battery

Reliability and Validity: Good to excellent

Administrative Considerations: Level B, requires formal training in testing, also suitable for group use.

Woodcock Reading Mastery Test — Revised, 1987 (WRMT–R)

Author: Richard W. Woodcock

Publisher: American Guidance Service

Canadian Distributor: Psycan

Description: Form G is comprised of six core subtests: visual auditory learning, letter identification, word identification, word attack, word comprehension, passage comprehension and one optional test: supplementary letter checklist. Form H is comprised of four of the six core subtests: word identification, word attack, word comprehension and passage comprehension.

Test Scores: Age and grade-based percentile ranks, standard scores, and age and grade equivalents

Population: 5–75+ years

Administration Time: Untimed, 10–30 minutes per subtest

Reliability and Validity: Very good (validity is not addressed)

Administrative Considerations: Level B, requires formal training in testing.

Writing Process Test, 1992 (WPT)

Authors: R. Warden and T. A. Hutchinson

Publisher: Riverside Publishing Co.

Canadian Distributor: Nelson Canada

Description: Assesses skills in planning, writing and revising an original composition. This is a norm-referenced, performance-based assessment using an analytical scale. Two equivalent forms.

Test Scores: Grade equivalents

Population: Grades 2–12

Administration Time: 45 minutes, plus 30 minutes for revision

Reliability and Validity: Good

Administrative Considerations: Level A, no formal training in testing required, suitable for group use.

CREATIVITY

Group Inventory for Finding Creative Talent *(Primary Level, Elementary level, and Upper Elementary Level)*

Author: Sylvia B. Rimm

Publisher: Educational Assessment Service, Inc.

Canadian Distributor: None

Description: Areas assessed include independence, curiosity, perseverance, flexibility and varied interests.

Test Scores: Percentile scores and normal score equivalents are provided.

Population: Grades 1–6.

Administration Time: Untimed; approximately 20–45 minutes.

Reliability: Manual reports interscorer, test-retest and alternate form reliability.

Validity: Manual reports construct and criterion-related validity.

Administrative Considerations: Level B, requires formal training in testing, also suitable for group use.

Group Inventory for Finding Interests (Level One, Grades six through nine, and level Two, Grades nine through twelve)

Authors: Sylvia B. Rimm and Gary A. Davis
Publisher: Educational Assessment Service, Inc.
Canadian Distributor: None
Description: Areas assessed include attitudes associated with creativity: independence, curiosity, perseverance, flexibility and breadth of interests.
Test Scores: Percentile scores and normal score equivalents.
Population: Grades 6–12.
Administration Time: Untimed; approximately 20–45 minutes.
Reliability: Manual reports internal consistency.
Validity: Manual reports construct and criterion-related validity.
Administrative Considerations: Level B, requires formal training in testing, also suitable for group use.

Khatena-Torrance Creative Perception Inventory

Authors: Joe Khatena and E. Paul Torrance
Publisher: The Stoelting Company
Canadian Distributor: The Testing Materials Resource Book
Description: Areas assessed include creative perception (totals). On *What Kind of Person Are You* (WKOPAY), five factors are measured: Acceptance of authority, self-confidence, inquisitiveness, awareness of others and disciplined imagination. On Something About Myself (SAM), the following factors are measured: environmental sensitivity, initiative, self-strength, intellectuality, individuality and artistry.
Test Scores: Standard scores for totals and factor groupings.
Population: Junior high school to adult.
Administration Time: Untimed; approximately 40–45 minutes.
Reliability: Manual reports test-retest reliability, internal consistency and interscorer reliability.
Validity: Manual reports construct, content and criterion-related validity.
Administrative Considerations: Level B, requires formal training in testing, also suitable for group use.

Thinking Creatively with Sounds and Words — Onomatopoeia/Images

Authors: E. Paul Torrance, Joe Khatena and Bert F. Cunningham
Publisher: Personnel Press/Testing
Canadian Distributor: The Testing Materials Resource Book
Description: Areas assessed include originality.
Test Scores: Means, standard deviations, and standard scores by grade and age for males and females.
Population: Ages eight through adult.
Administration Time: Approximately 35 minutes.
Reliability: Manual reports interscorer, split-half and alternate form reliability.
Validity: Manual reports construct and criterion-related validity.
Administrative Considerations: Level B, requires formal training in testing, also suitable for group use. The examiner, through self-study, should be thoroughly familiar with test administration and scoring procedures.

Thinking Creatively with Sounds and Words — Sounds/Images

Authors: E. Paul Torrance, Joe Khatena and Bert F. Cunningham
Publisher: Personnel Press/Testing
Canadian Distributor: The Testing Materials Resource Book
Description: Areas assessed include originality.
Test Scores: Means and standard deviations are provided for subjects by sex and grade, and for college students.
Population: Ages eight through adult.
Administration Time: Approximately 35 minutes.
Reliability: Manual reports interscorer, split-half and alternate form reliability.
Validity: Manual reports construct and criterion-related validity.

Administrative Considerations: Level B, requires formal training in testing, also suitable for group use. The examiner, through self-study, should be thoroughly familiar with test administration and scoring procedures.

Torrance Tests of Creative Thinking — Figural Test

Author: E. Paul Torrance

Publisher: Personnel Press/Testing

Canadian Distributor: The Testing Materials Resource Book

Description: Areas assessed include creative thinking: picture construction, picture completion and parallel lines.

Test Scores: Raw scores for fluency, flexibility, originality and elaboration. T-score conversion tables are provided. Means and standard deviations are presented for Forms A and B for grades ECS through graduate school for fluency, flexibility, originality and elaboration.

Population: ECS–adult.

Administration Time: 30 minutes.

Reliability: Manual reports interscorer, alternate form and test-retest reliability.

Validity: Manual reports content, construct, concurrent and predictive validity.

Administrative Considerations: Level C, restricted tests requiring professional qualifications.

Torrance Tests of Creative Thinking — Verbal Test

Author: E. Paul Torrance

Publisher: Personnel Press/Testing

Canadian Distributor: The Testing Materials Resource Book

Description: Areas assessed include creative thinking: asking, guessing causes, guessing consequences, product improvement, unusual uses and unusual questions.

Test Scores: Raw scores for originality, flexibility, fluency and elaboration. Conversion table for T scores is provided. Means and standard deviations for each subtest for fluency, flexibility and originality; means and standard deviations for grades ECS through graduate school for Forms A and B.

Population: ECS–adult.

Administration Time: 45 minutes

Reliability: Manual reports interscorer, alternate form and test-retest reliability.

Validity: Manual reports content, construct, concurrent and predictive validity.

Administrative Considerations: Level C, restricted tests requiring professional qualifications.

Welsh Figure Preference Test — Research Edition

Author: George S. Welsh

Publisher: Consulting Psychologists Press

Canadian Distributor: The Testing Materials Resource Book

Description: Areas assessed include personality: three validating scales, five empirical scales, eight item content keys, and three "judged" item scales.

Test Scores: Means and standard deviations for men, women, male psychiatric patients and children. Raw scores should be converted to T-scores appropriate for the subject's sex, age, education or psychiatric status.

Population: Children and adults.

Administration Time: Untimed.

Reliability: Manual reports test-retest reliability.

Validity: Manual reports content and concurrent validity.

Administrative Considerations: Level B, requires formal training in testing, also suitable for group use.

INTELLECTUAL
GROUP ADMINISTERED TESTS

Canadian Cognitive Abilities Test, 1990 (CCAT)

Author: Edgar N. Wright, in association with Robert L. Thorndike and Elizabeth P. Hagen

Publisher: Nelson Canada

Canadian Distributor: Nelson Canada

Description: Assesses the development of cognitive abilities related to verbal, quantitative and non-verbal reasoning, and problem solving.

Test Scores: Standard age scores

Population: Primary battery (ECS to Grade 2), Multilevel edition (Grades 3–12)

Administration Time: 90 minutes

Reliability and Validity: Moderate to very good

Administrative Considerations: Level B, requires formal training in testing.

Culture Fair Intelligence Test

Authors: R.B. Cattell and A.K.S. Cattell

Publisher: Institute for Personality and Ability Testing

Canadian Distributor: The Testing Materials Resource Book

Description: Areas assessed include individual intelligence quotient.

Test Scores: Standard score, intelligence quotients, raw scores and percentile ranks corresponding to standard intelligence quotient scores.

Population: Ages 8 to adult.

Administration Time: 12½ minutes.

Reliability: Manual reports internal consistency and alternate form reliability.

Validity: Manual reports construct and concrete validity.

Administrative Considerations: Level B, requires formal training in testing, also suitable for group use.

Differential Aptitude Tests

Authors: George K. Bennett, Harold G. Seashore and Alexander G. Wesman

Publisher: The Psychological Corporation

Canadian Distributor: Harcourt Canada

Description: Areas assessed include verbal reasoning, numerical ability, abstract reasoning, clerical speed and accuracy, mechanical reasoning, space relations, spelling and language usage.

Test Scores: Percentiles and stanines, means and standard deviations are provided for fall and spring administrations of the eight tests for Grades 8–12.

Population: Grades 8–12.

Administration Time: 181 minutes.

Reliability: Manual reports split-half and alternate form reliability.

Validity: Manual reports concurrent and predictive validity.

Administrative Considerations: Level B, requires formal training in testing, also suitable for group use.

Otis-Lennon School Ability Test, 1989 (OLSAT)

Authors: Arthur S. Otis and Roger T. Lennon

Publisher: The Psychological Corporation

Canadian Distributors: Nelson Canada, The Testing Materials Resource Book, Harcourt Canada

Description: Measures abstract reasoning and thinking ability; provides submeasures in verbal comprehension, verbal reasoning, pictorial reasoning, figural reasoning and quantitative reasoning.

Test Scores: School ability index, percentile ranks, stanines

Population: ECS to Grade 12

Administration Time: 60–75 minutes

Reliability and Validity: Good to excellent

Administrative Considerations: Level B, requires formal training in testing.

Note: Can provide achievement versus ability comparisons when used jointly with the Stanford or Metropolitan Achievement tests. No reading is required of students in Grades 1–3.

SOI Gifted Screening Form

Authors: Mary Meeker and Robert Meeker.
Publisher: SOI Systems
Canadian Distributor: SOI Canada
Description: Areas assessed include creativity, visual and auditory memory, visual perception and convergent production.
Test Scores: Means, standard deviations and normal score equivalents for Grades 1–6 and Grades 7 & 8 combined.
Population: Grades 2–12.
Administration Time: Approximately 1½ hours.
Reliability: Manual does not report.
Validity: Manual does not report.
Administrative Considerations: Level B, requires formal training in testing, also suitable for group use.

SOI Learning Abilities Test

Authors: Mary Meeker and Robert Meeker.
Publisher: SOI Systems
Canadian Distributor: SOI Canada
Description: Areas assessed include 24 factors relating to reading, arithmetic, creativity, cognition, memory, evaluation, convergent production and divergent production.
Test Scores: Individual scores for each of the 24 factors. Normal score equivalents, means and standard deviations are provided for Grades 1–6 and Grades 7 & 8 combined.
Population: Grades 2–12.
Administration Time: Untimed; approximately 110 minutes.
Reliability: Manual does not report.
Validity: Manual does not report.
Administrative Considerations: Level B, requires formal training in testing, also suitable for group use.

INTELLECTUAL

INDIVIDUALLY ADMINISTERED TESTS

Cognitive Assessment System (CAS)

Authors: J. A. Naglieri and J. P. Das
Publisher: Riverside Publishing
Canadian Distributor: Nelson Canada
Description: A measure of intelligence based on the PASS theory of cognitive processing. Includes measures of planning, attention, simultaneous processing, successive processing, in addition to a full scale score.
Test Scores: Standard Scores (Mean = 100), SD = 15
Population: Ages 5–17
Administration Time: 60 minutes
Reliability and Validity: Good to excellent
Administrative Considerations: Level C, restricted test requiring professional qualifications.

Detroit Tests of Learning Aptitude, Third Edition, 1991 (DTLA–3)

Author: Donald D. Hammill
Publisher: PRO-ED, Inc.
Canadian Distributors: Multi-Health Systems Inc., Mind Resources Inc., James Battle & Associates, Guidance Centre, The Testing Materials Resource Book, Psycan
Description: Designed to measure general intelligence and discrete ability areas; provides submeasures in general ability (overall composite), verbal, nonverbal, attention, motor and theoretical composites.
Test Scores: Standard scores, percentiles and age equivalents
Population: 6–17 years, 11 months
Administration Time: 50–120 minutes
Reliability and Validity: Good to excellent
Administrative Considerations: Level C, restricted test requiring professional qualifications.

Kaufman Assessment Battery for Children, 1983 (Kaufman ABC)

Authors: Alan S. Kaufman and Nadeen L. Kaufman
Publisher: American Guidance Service
Canadian Distributor: Psycan
Description: Assesses cognitive development grounded in the individual's style of solving problems and processing information, provides measures on mental processing (sequential and simultaneous processing) and achievement.

Test Scores: IQ scores (mean = 100, SD = 15)
Population: 2½–6½ years
Administration Time: From 35 minutes (2–6 years) to 85 minutes (7–12½ years)
Reliability and Validity: Moderate to excellent
Administrative Considerations: Level C, restricted test requiring professional qualifications.

Note: Special edition of the Kaufman-ABC is a non-verbal scale available for students who are deaf or hard of hearing, speech and language disordered or non-English speaking children, 4–12½ years.

Raven's Progressive Matrices, 1983 (RPM)

Author: J.C. Raven
Publisher: The Psychological Corporation
Canadian Distributors: The Testing Materials Resource Book, Harcourt Canada
Description: Considered as a non-verbal assessment of perception and thinking skills.
Test Scores: Total score, norms to convert to age equivalents
Population: Standard form: 6–65 years, Coloured form: 5–11 years, Advanced form: 11 plus years
Administration Time: 15 minutes
Reliability and Validity: Good
Administrative Considerations: Level B, requires formal training in testing, also suitable for group use.

Stanford-Binet Intelligence Scale – Fourth Edition, 1986 (SB–IV)

Authors: Robert L. Thorndike, Elizabeth P. Hagen and Jerome M. Sattler
Publisher: Nelson Publishing
Canadian Distributor: Nelson Canada
Description: Measures cognitive abilities that provide an analysis of the pattern as well as the overall level of an individual's cognitive development; provides submeasures in verbal reasoning, abstract/visual reasoning, quantitative reasoning and short-term memory.
Test Scores: IQ scores (Standard Age Scores)
Population: 2 years to adult
Administration Time: From about 30 minutes for preschoolers to 1 hour for older students
Reliability and Validity: Very good to excellent
Administrative Considerations: Level C, restricted test requiring professional qualifications.

Test of Nonverbal Intelligence – Second Edition, 1990 (TONI–2)

Authors: Linda Brown, Rita J. Sherbenov and Susan K. Johnsen
Publisher: PRO-ED Inc.
Canadian Distributors: Mind Resources Inc., James Battle & Associates, Guidance Centre, The Testing Materials Resource Book
Description: A language-free measure of abstract/figural problem solving.
Test Scores: Total score, standard score and percentile rank
Population: 5–85 years, 11 months
Administration Time: 15–30 minutes
Reliability and Validity: Good
Administrative Considerations: Level C, restricted test requiring professional qualifications.

Wechsler Intelligence Scale for Children – Third Edition, 1991 (WISC-III)

Author: David Wechsler
Publisher: The Psychological Corporation
Canadian Distributor: Harcourt Canada
Description: A measure of a student's intellectual ability, provides submeasures in verbal and non-verbal reasoning skills.
Test Scores: IQ scores (mean = 100, SD = 15), subtest scores (mean = 10)
Population: 6–16 years, 11 months
Administration Time: 50–75 minutes
Reliability and Validity: Good to excellent
Administrative Considerations: Level C, restricted test requiring professional qualifications.

Wechsler Preschool and Primary Scale of Intelligence, Revised, 1989 (WPPSI-R)

Author: David Wechsler
Publisher: The Psychological Corporation
Canadian Distributor: Harcourt Canada
Description: A measure of a child's intellectual ability, provides submeasures in verbal and non-verbal reasoning skills.
Test Scores: IQ scores (mean = 100, SD = 15), subtest scores (mean = 10)
Population: 2 years, 11 months to 7 years, 3 months
Administration time: 75 minutes
Reliability and Validity: Good to excellent
Administrative Considerations: Level C, restricted test requiring professional qualifications.

Woodcock-Johnson Psycho-Educational Battery-Revised, 1991 (WJ-R); Tests of Cognitive Ability

Authors: Richard W. Woodcock and M. Bonner Johnson
Publisher: The Riverside Publishing Company
Canadian Distributor: Nelson Canada
Description: Measures of aptitude based on the Horn-Catell theory of fluid and crystallized intelligence. Includes measures of comprehension, knowledge, fluid reasoning, visual processing, auditory processing, processing speed short-term memory and long-term retrieval.
Test Scores: Cluster scores, average age scores, percentile ranks
Population: 2–90 years
Administration Time: 30–40 minutes for the Standard battery, an additional 40 minutes for the Supplemental battery
Reliability and Validity: Good to excellent
Administrative Considerations: Level B, requires formal training in testing, also suitable for group use.

LANGUAGE

INDIVIDUALLY ADMINISTERED TESTS

Clinical Evaluation of Language Functions, Revised (CELF-R)

Authors: E. Semel, E.H. Wiig, W. Secord
Publisher: The Psychological Corporation
Canadian Distributor: Harcourt Canada
Description: Eleven categories verbal test measuring language processing and production, including phrase and sentence imitation, phrase completion, serial recall, phoneme recall production, abstraction, formulation of attributes, syntax and morphology, semantics, memory, and word finding and retrieval.
Test Scores: Standard scores, percentile ranks and age equivalents
Population: ECS to Grade 12
Administration Time: 1–2 hours
Reliability and Validity: Good to very good
Administrative Considerations: Level B, requires formal training in testing.

Peabody Picture Vocabulary Test, Revised, 1981 (PPVT-R)

Authors: L. M. Dunn and L. M. Dunn
Publisher: American Guidance Services
Canadian Distributor: Psycan
Description: Measures receptive (hearing) vocabulary. Two equivalent forms.
Test Scores: Percentile ranks, stanines and age equivalent scores
Population: 2.6–40 years
Administration Time: 10–20 minutes
Reliability and Validity: Moderate to very good
Administrative Considerations: Level B, requires formal training in testing.

Test of Language Development, 1988 (TOLD-2)

Authors: P. L. Newcomer and D. D. Hammill
Publisher: PRO-ED Inc.
Canadian Distributors: Multi-Health Systems Inc., The Testing Materials Resource Book

Description: Seven subtests measure spoken language components: picture vocabulary, oral vocabulary, grammatical understanding, sentence imitation, grammatical completion, word articulation, word discrimination.

Test Scores: Standard scores, percentiles, age equivalents, quotients

Population: 4–8 years, 11 months

Administration Time: Untimed; approximately 40 minutes

Reliability and Validity: Good

Administrative Considerations: Level B, requires formal training in testing.

The Word Test — Elementary-Revised, 1990

Authors: C. Jorgensen, M. Barrett, R. Huisingh and L. Zachman

Publisher: Linguisystems Inc.

Canadian Distributor: None

Description: Orally assesses students' expressive vocabulary and understanding of semantics in six contexts: associations, synonyms, semantic absurdities, antonyms, definitions and multiple definitions.

Test Scores: Age equivalents, percentile ranks and standard scores

Population: 7–11 years

Administration Time: Untimed, 30 minutes

Reliability and Validity: Moderate to good

Administrative Considerations: Level B, requires formal training in testing.

THINKING SKILLS

Cornell Critical Thinking Test Levels X and Z

Authors: Robert H. Ennis and Jason Millman

Publisher: Critical Thinking Project

Canadian Distributor: Brijan Resources Ltd.

Description: Areas assessed include critical thinking, deduction, assumptions, reliability of observations, reliability of authorities, generalizations, hypotheses, theories, ambiguity vagueness, and specificity and relevance.

Test Scores: Means, standard deviations, percentile rank equivalents and total score.

Population: Level X — ages 14 and above; Level Z — higher ability secondary students and above.

Administration Time: 50 minutes.

Reliability: Manual reports Kuder-Richardson reliability and Spearman-Brown reliability.

Validity: Manual reports construct and concurrent validity.

Administrative Considerations: Level B, requires formal training in testing, also suitable for group use.

Measure of Questioning Skills

Authors: Garnet Millar and Ralph Himsl

Publisher: Scholastic Testing Service, Inc.

Canadian Distributor: None.

Description: The *Measure of Questioning Skills* is a liberating tool assessing both the quantity and quality of student questions in order to help educators expand their students' thinking skills.

Test Scores: Norms are provided for males and females.

Population: Grades 3–10 inclusive

Administration Time: 30 minutes

Administrative Considerations: Level A, no formal training in testing is required.

Ross Test of Higher Cognitive Processes

Authors: John D. Ross and Catherine M. Ross

Publisher: Academic Therapy Publications

Canadian Distributor: The Testing Materials Resource Book

Description: Areas assessed include analogies, deductive reasoning, missing premises, abstract relations, sequential synthesis, questioning strategies, analysis of relevant and irrelevant information, and analysis of attributes.

Test Scores: Raw scores for each of the eight sections and a total score and percentile norms are provided for gifted and non-gifted students.

Population: Grades 4–6.

Administration Time: 105 minutes.

Reliability: Manual reports test-retest and split-half reliability.

Validity: Manual reports construct validity.

Administrative Considerations: Level B. requires formal training in testing, also suitable for group use.

Watson-Glaser Critical Thinking Appraisal

Authors: Woodwin Watson and Edward Glaser
Publisher: The Psychological Corporation
Canadian Distributor: Harcourt Canada
Description: Areas assessed include inference, recognition of assumptions, deduction, interpretation and evaluation of arguments.
Test Scores: Raw score, percentile rank and stanine rank.
Population: Grades 9–adult.
Administration Time: 40 minutes.
Reliability: Manual reports split-half reliability.
Validity: Manual reports content, concurrent and construct validity.
Administrative Considerations: Level B. requires formal training in testing, also suitable for group use.

STANDARDS OF COMPETENCE: LEVEL OF TESTS AND QUALIFICATIONS[159]

LEVELS	MINIMUM QUALIFICATIONS	SELECTED EXAMPLES
Level A Tests No formal training in testing required	➢ Four years teacher education inclusive of a Bachelor's degree ➢ Experience working within school systems (as a teacher and/or consultant) ➢ Familiarity with topic ➢ Able to follow administration procedures set out in manual ➢ Informal training: e.g., inservice in the use of a particular instrument	➢ Alberta Achievement Tests ➢ Gates-McGinitie Reading Tests ➢ Metropolitan Readiness Tests ➢ Alberta Diagnostic Reading/Mathematics Tests ➢ Teacher Alert System ➢ Stanford Diagnostic Mathematics/Reading Tests ➢ Canadian Tests of Basic Skills ➢ Informal reading/mathematics/spelling inventories
Level B Tests Requires formal training in testing	➢ Four years teacher education inclusive of a Bachelor's degree ➢ Experience working within school systems (as a teacher and/or consultant) ➢ Senior undergraduate or graduate course work in test principles (reliability, validity, test construction, norm groups, types of scores), administration and interpretation ➢ Training in specific area related to test ➢ Experience administering and interpreting test	➢ Peabody Picture Vocabulary Test, revised ➢ Woodcock Reading Mastery Tests ➢ Tests of Language Development II ➢ Detroit Test of Learning Aptitude ➢ Wechsler Individual Achievement Test ➢ Woodcock-Johnson Psycho-educational Battery, revised Achievement (Part II)
Level C Tests Restricted tests requiring professional qualifications	➢ Four years teacher education inclusive of a Bachelor's degree ➢ Experience working within school systems (as a teacher and/or consultant) ➢ Recognized Master's degree with a major in special education or educational psychology, including • graduate course work in test principles (reliability, validity, test construction, norm groups, types of scores), and • graduate course work in administering and interpreting individual tests ➢ Fulfill any additional requirements as stipulated by the test publisher as being necessary of desirable for administration of each particular test instrument. *It is expected that individuals administering and interpreting Level C tests will be eligible for registration as a Chartered Psychologist with the Psychologists Association of Alberta*	➢ Intelligence Scales (WISC-III, WAIS-R, WPPSI-R, Stanford Binet IV, K-ABC) ➢ Personality Tests (High School Personality Questionnaire, Personality Inventory for Children, projective instruments) ➢ Self-esteem inventories ➢ Bender Visual Motor Gestalt Test ➢ Depression inventories ➢ ADD inventories ➢ Torrance Tests of Creative Thinking ➢ Woodcock-Johnson Psycho-educational Battery, revised, Cognitive Ability (Part I)

BEST COPY AVAILABLE

DISTRIBUTORS

Brijan Resources Ltd.
822 Burton Loop N.W.
Edmonton, AB T6R 2J2
Telephone: 1-800-567-1147
or (780) 988-6516
Fax: 1-877-430-8305

Curriculum Associates Inc.
Alberta Distributor:
Virginia Wood
1408 Crescent Road N.W.
Calgary, AB T2M 4B1
Telephone: (403) 282-2441
Fax: (403) 282-1409

Educational Assessment Service, Inc.
W6050 Apple Road
Watertown, WI 53098
U.S.A.
Telephone: 1-800-795-7466
Fax: (920) 262-6622

Guidance Centre
712 Gordon Baker Road
Toronto, ON M2H 3R7
Telephone: 1-800-668-6247
Fax: (416) 502-1101
Web site: http://www.utoronto.ca/guidance/

Harcourt Canada
55 Horner Ave.
Toronto, ON M8Z 4X6
Telephone: 1-800-387-7278
Fax: 1-800-665-7307
Web site: http://www.harcourtcanada.com

James Battle & Associates, Ltd.
708, 10240 - 124 St.
Edmonton, AB T5N 3W6
Telephone: (780) 488-1362

Learning Resources Distributing Centre
(LRDC)
12360 - 142 St. N.W.
Edmonton, AB T5L 4X9
Telephone: (780) 427-5775
Fax: (780) 422-9750
Web site: http://www.lrdc.edc.gov.ab.ca/

LinguiSystems, Inc.
3100 - 4th Ave.
East Moline, IL 61244-9700
U.S.A.
Telephone: 1-800-776-4332
or (309) 755-2300
Fax: 1-800-577-4555 or (309) 755-2377
Web site: http://www.linguisystems.com

Mind Resources Inc.
P.O. Box 126
Kitchener, ON N2G 3W9
Telephone: (519) 895-0330

Multi-Health Systems Inc. (MHS Inc.)
3770 Victoria Park Ave.
Toronto, ON M2H 3M6
Telephone: 1-800-268-6011
Fax: (416) 492-3343

Nelson Canada (now ITP Nelson)
1120 Birchmount Road
Scarborough, ON M1K 5G4
Telephone: 1-800-268-2222
Fax: 1-800-430-4445

Psycan Corporation
#12, 120 West Beaver Creek Road
Richmond Hill, ON L4B 1L2
Telephone: 1-800-263-3558
Fax: (905) 731-5029

Scholastic Testing Service, Inc.
480 Meyer Road
Bensenville, IL 60106–1617
U.S.A.
Telephone: (630) 766–7150
Fax: (630) 766–8054
Web site: http://www.ststesting.com/

SOI Canada
(Ms. Eva Raycraft)
3608 West 38th Ave.
Vancouver, B.C. V6N 2Y2
Telephone: (604) 266–1981
Fax: (609) 276–1976

The Testing Materials Resource Book
(M. D. Angus & Associates Inc.)
2nd Floor, 2639 Kingsway Ave.
Port Coquitlam, BC V3C 1T5
Telephone: (604) 464–7919
Fax: (604) 941–1705
Web site: http://www.psychtest.com/

SECTION 11: SUPPORT NETWORKS

Alberta Associations for Bright Children (AABC)
The Bright Site
Room 1280, 6240 – 113 St.
Edmonton, AB T6H 3L2
Telephone: (780) 422-0362
Toll free in Alberta: 310-0000 and ask for 422-0362
Fax: (780) 413-1631
Web site:
http://www.freenet.edmonton.ab.ca/aabc/index.html

Alberta Teachers' Association Gifted and Talented Education Council (GTEC)
The Alberta Teachers' Association
11010 – 142 St. N.W.
Edmonton, AB T5N 2R1
Telephone: (780) 447-9400
Fax: (780) 455-6481
Web site: http://www.gtecouncil.com/

Association for the Gifted
Council for Exceptional Children
1920 Association Drive
Reston, VA 22091
Telephone: 1-888-232-7733
or (703) 620-3660
Fax: (703) 264-9494
Web site: http://coehp.idbsu.edu/tag

Centre for Gifted Education
170 Education Block
University of Calgary
2500 University Dr. N.W.
Calgary, AB T2N 1N4
Telephone: (403) 220-7799
Fax: (403) 210-2068
Web site:
http://www.acs.ucalgary.ca/~gifteduc/

National Association for Gifted Children
Suite 550, 1707 L St. N.W.
Washington, DC 20036
Telephone: (202) 785-4268
Website: http://www.nagc.org/

The National Research Center on the Gifted and Talented
The University of Connecticut
362 Fairfield Rd., U-7
Storrs, CT 06269-2007
Telephone: (860) 486-4676
Fax: (860) 486-2900
Web site: http://www.ucc.uconn.edu/~wwwgt/nrcgt.html

World Council for Gifted and Talented Children, Inc.
18401 Hiawatha St.
Northridge, CA 91326
U.S.A.
Telephone: (818) 368-7501
Fax: (818) 368-2163
Web site: http://www.worldgifted.org

SECTION 12: ENDNOTE REFERENCES

INTRODUCTION

Adapted from *Position paper of the gifted and talented education council of the Alberta Teachers' Association* (p. 5), by The Alberta Teachers' Association Gifted and Talented Education Council, 1994, Edmonton, AB: The Alberta Teachers' Association Gifted and Talented Education Council. Adapted with permission.

Reproduced by permission from *Programming for giftedness — a contemporary view* (p. 6), Volume I of *The Programming for giftedness series*, by D. J. Treffinger & M. R. Sortore, 1992, Sarasota, FL: Center for Creative Learning, Inc.

SECTION 1

From *A Process approach to planning for contemporary programming* (pp. 21, 22, 23), Volume II of *The Programming for Giftedness series*, by D. J. Treffinger & M. R. Sortore, 1992, Sarasota, FL: Center for Creative Learning, Inc. Reproduced with permission.

SECTION 2

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Evaluation and Feedback

We hope *Teaching Students who are Gifted and Talented* addresses most of your questions and concerns regarding providing appropriate programs for students who are gifted and talented. Since the users of this resource are in the best position to identify the strengths and weaknesses, please take some time to share your thoughts with us. If you have further suggestions and comments on the use and value of this resource, please feel free to add those comments below and forward your feedback to the Special Education Branch, Alberta Learning.

How do you rate *Teaching Students who are Gifted and Talented?*

	Yes	**No**	**Comments**
Useful?	☐	☐	
Easy to understand?	☐	☐	
Well-organized?	☐	☐	
Complete?	☐	☐	

Overall rating	5 (Excellent)	4	3	2	1 (Poor)

Other comments:

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